

# Installation Manual

## Installation and Appliance Setup

**INSTALLER:** Leave this manual with party responsible for use and operation.

**OWNER:** Retain this manual for future reference.

**NOTICE:** DO NOT discard this manual!

# QUADRA-FIRE®

### Models:

SAPH-MBK-IPI

SAPH-MBK-IPIL

SAPH-D-PMH-IPI

SAPH-D-PMH-IPIL

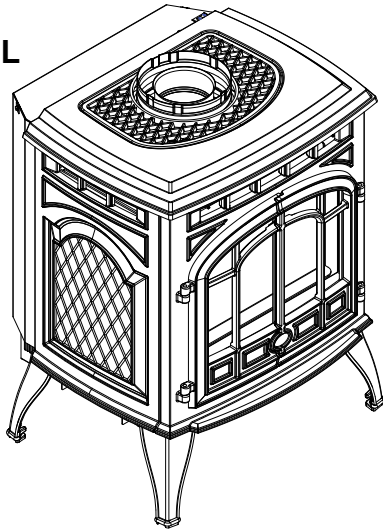
SAPH-D-MBK-IPI

SAPH-D-MBK-IPIL

SAPH-D-CSB-IPI

SAPH-D-CSB-IPIL

GAS-FIRED



This appliance may be installed as an OEM installation in manufactured home (USA only) or mobile home and must be installed in accordance with the manufacturer's instructions and the manufactured home construction and safety standard, *Title 24 CFR, Part 3280* or *Standard for Installation in Mobile Homes, CAN/CSA Z240MH*, in Canada.

*This appliance is only for use with the type(s) of gas indicated on the rating plate.*

**WARNING:** If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury, or death.

- **DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **What to do if you smell gas**
  - **DO NOT** try to light any appliance.
  - **DO NOT** touch any electrical switch. **DO NOT** use any phone in your building.
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

### WARNING



**HOT GLASS WILL CAUSE BURNS.**

**DO NOT TOUCH GLASS UNTIL COOLED.**

**NEVER ALLOW CHILDREN TO TOUCH GLASS.**

In the Commonwealth of Massachusetts installation must be performed by a licensed plumber or gas fitter.

See Table of Contents for location of additional Commonwealth of Massachusetts requirements.

## ▲ Safety Alert Key:

- **DANGER!** Indicates a hazardous situation which, if not avoided will result in death or serious injury.
- **WARNING!** Indicates a hazardous situation which, if not avoided could result in death or serious injury.
- **CAUTION!** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE:** Used to address practices not related to personal injury.

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→ = Contains updated information.

## Installation Standard Work Checklist

### ATTENTION INSTALLER: Follow this Standard Work Checklist

This standard work checklist is to be used by the installer in conjunction with, not instead of, the instructions contained in this installation manual.

**Customer:** \_\_\_\_\_ **Date Installed:** \_\_\_\_\_  
**Lot/Address:** \_\_\_\_\_ **Location of Stove:** \_\_\_\_\_  
**Model (circle one):** SAPH-MBK-IPI SAPH-MBK-IPIL **Installer:** \_\_\_\_\_  
SAPH-D-PMH-IPI SAPH-D-PMH-IPIL **Dealer/Distributor Phone #** \_\_\_\_\_  
SAPH-D-MBK-IPI SAPH-D-MBK-IPIL **Serial #:** \_\_\_\_\_  
SAPH-D-CSB-IPI SAPH-D-CSB-IPIL



**WARNING! Risk of Fire or Explosion! Failure to install appliance according to these instructions can lead to a fire or explosion.**

#### **Appliance Install**

Verified combustible or non-combustible clearances to walls. (Pg. 8)  
Stove is installed level. (Pg. 35)

YES

IF NO, WHY?

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#### **Venting/Chimney Section 7 (Pg 36-43)**

Venting configuration complies with allowable vent requirements.  
Venting installed, locked and secured in place with proper clearance.  
Interior/Exterior firestops installed and sealed.  
Attic insulation shield installed.  
Exterior wall/Roof flashing installed and sealed.  
Terminations/Roof flashing installed and sealed.

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#### **Electrical Section 8 (Pg 44-47)**

Unswitched power (110-120 VAC) provided for the appliance.  
Switch wires properly installed.

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#### **Gas Section 9 (Pg 48-49)**

Appliance configuration matches fuel type.  
Was a conversion performed?  
Leak check performed and inlet/outlet pressure verified.  
Set air shutter for optimal flame appearance.

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#### **Appliance Setup Section 10 (Pg 50-52)**

All packaging and protective materials are from removed inside/under/on the appliance).  
Refractories, logs, and embers installed correctly.  
Glass assembly installed and secured.  
Accessories installed properly.  
Mesh, doors properly installed.  
Manual bag and all of its contents are removed from inside/under the appliance and given to party responsible for use and operation.  
Started appliance and verified no gas leaks exist.

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#### **Hearth & Home Technologies recommends the following:**

- Photographing the installation and copying this checklist for your file.
- That this checklist remain visible at all times on the appliance until the installation is complete.

**Comments:** Further description of the issues, who is responsible (Installer/ Builder/ Other Trades, etc) and corrective action needed \_\_\_\_\_

Comments Communicated to party responsible \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_  
(Builder / Gen. Contractor/) (Installer) (Date)

→ = Contains updated information.

2343-982 Rev. B 2/14

# 1 Product Specific and Important Safety Information

## A. Appliance Certification

**MODELS:** SAPH-MBK-IPI, SAPH-D-PMH-IPI, SAPH-D-MBK-IPI, SAPH-D-CSB-IPI

**LABORATORY:** Underwriters Laboratories, Inc. (UL)

**TYPE:** Direct Vent Heater

**STANDARD:** ANSI Z21.88-2009/CSA 2.33-2009

This product is listed to ANSI standards for “Vented Gas Fireplace Heaters” and applicable sections of “Gas Burning Heating Appliances for Manufactured Homes and Recreational Vehicles”, and “Gas Fired Appliances for Use at High Altitudes”.

**NOTICE:** This installation must conform with local codes. In the absence of local codes you must comply with the National Fuel Gas Code, ANSI Z223.1-latest edition in the U.S.A. and the CAN/CGA B149 Installation Codes in Canada.

### NOT INTENDED FOR USE AS A PRIMARY HEAT SOURCE.

This appliance is tested and approved as either supplemental room heat or as a decorative appliance. It should not be factored as primary heat in residential heating calculations.

## B. Glass Specifications

This appliance is equipped with 5 mm ceramic glass. Replace glass only with 5 mm ceramic glass. Please contact your dealer for replacement glass.

## C. BTU Specifications

Models (U.S. or Canada)		Maximum Input BTU/h	Minimum Input BTU/h	Orifice Size (DMS)
SAPH-MBK-IPI SAPH-D-PMH-IPI SAPH-D-MBK-IPI SAPH-D-CSB-IPI (NG)	(0-2000 FT)	25,000	19,500	42
SAPH-MBK-IPIL SAPH-D-PMH-IPIL SAPH-D-MBK-IPIL SAPH-D-CSB-IPIL (LP)	(0-2000 FT)	22,500	16,500	54

## D. High Altitude Installations

**NOTICE:** If the heating value of the gas has been reduced, these rules do not apply. Check with your local gas utility or authorities having jurisdiction.

When installing above 2000 feet elevation:

- In the USA: Reduce input rate 4% for each 1000 feet above 2000 feet.
- In CANADA: Input ratings are certified without a reduction of input rate for elevations up to 4500 feet (1370 m) above sea level. Please consult provincial and/or local authorities having jurisdiction for installations at elevations above 4500 feet (1370 m).

Check with your local gas utility to determine proper orifice size.

## E. Non-Combustible Materials Specification

Material which will not ignite and burn. Such materials are those consisting entirely of steel, iron, brick, tile, concrete, slate, glass or plasters, or any combination thereof.

Materials that are reported as passing **ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 °C** shall be considered non-combustible materials.

## F. Combustible Materials Specification

Materials made of or surfaced with wood, compressed paper, plant fibers, plastics, or other material that can ignite and burn, whether flame proofed or not, or plastered or unplastered shall be considered combustible materials.

## G. Electrical Codes

**NOTICE:** This appliance must be electrically wired and grounded in accordance with local codes or, in the absence of local codes, with **National Electric Code ANSI/NFPA 70-latest edition** or the **Canadian Electric Code CSA C22.1**.

- A 110-120 VAC circuit for this product must be protected with ground-fault circuit-interrupter protection, in compliance with the applicable electrical codes, when it is installed in locations such as in bathrooms or near sinks.



**Note:** The following requirements reference various Massachusetts and national codes not contained in this document.

## H. Requirements for the Commonwealth of Massachusetts

For all side wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:

### Installation of Carbon Monoxide Detectors

At the time of installation of the side wall horizontal vented gas fueled equipment, the installing plumber or gas fitter shall observe that a hard wired carbon monoxide detector with an alarm and battery back-up is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gas fitter shall observe that a battery operated or hard wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building or structure served by the side wall horizontal vented gas fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard wired carbon monoxide detectors.

In the event that the side wall horizontally vented gas fueled equipment is installed in a crawl space or an attic, the hard wired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.

In the event that the requirements of this subdivision can not be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements; provided, however, that during said thirty (30) day period, a battery operated carbon monoxide detector with an alarm shall be installed.

### Approved Carbon Monoxide Detectors

Each carbon monoxide detector as required in accordance with the above provisions shall comply with NFPA 720 and be ANSI/UL 2034 listed and IAS certified.

### Signage

A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented gas fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (1/2) in. in size, **"GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS"**.

## Inspection

The state or local gas inspector of the side wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CMR 5.08(2)(a)1 through 4.

## Exemptions

The following equipment is exempt from 248 CMR 5.08(2)(a)1 through 4:

- The equipment listed in Chapter 10 entitled "Equipment Not Required To Be Vented" in the most current edition of NFPA 54 as adopted by the Board; and
- Product Approved side wall horizontally vented gas fueled equipment installed in a room or structure separate from the dwelling, building or structure used in whole or in part for residential purposes.

## MANUFACTURER REQUIREMENTS

### Gas Equipment Venting System Provided

When the manufacturer of Product Approved side wall horizontally vented gas equipment provides a venting system design or venting system components with the equipment, the instructions provided by the manufacturer for installation of the equipment and the venting system shall include:

- Detailed instructions for the installation of the venting system design or the venting system components; and
- A complete parts list for the venting system design or venting system.

### Gas Equipment Venting System NOT Provided

When the manufacturer of a Product Approved side wall horizontally vented gas fueled equipment does not provide the parts for venting the flue gases, but identifies "special venting systems", the following requirements shall be satisfied by the manufacturer:

- The referenced "special venting system" instructions shall be included with the appliance or equipment installation instructions; and
- The "special venting systems" shall be Product Approved by the Board, and the instructions for that system shall include a parts list and detailed installation instructions.

A copy of all installation instructions for all Product Approved side wall horizontally vented gas fueled equipment, all venting instructions, all parts lists for venting instructions, and/or all venting design instructions shall remain with the appliance or equipment at the completion of the installation.

**See Gas Connection section for additional Commonwealth of Massachusetts requirements.**

## 2 Getting Started

### A. Design and Installation Considerations

Heat & Glo direct vent gas appliances are designed to operate with all combustion air siphoned from outside of the building and all exhaust gases expelled to the outside. No additional outside air source is required.

Installation **MUST** comply with local, regional, state and national codes and regulations. Consult insurance carrier, local building inspector, fire officials or authorities having jurisdiction over restrictions, installation inspection and permits.

Before installing, determine the following:

- Where the appliance is to be installed.
- The vent system configuration to be used.
- Gas supply piping requirements.
- Electrical wiring requirements.
- Whether optional accessories—devices such as a fan or remote control—are desired.



Installation and service of this appliance should be performed by qualified personnel. Hearth & Home Technologies suggests NFI certified or factory trained professionals, or technicians supervised by an NFI certified professional ([www.nficertified.org](http://www.nficertified.org)).

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. For assistance or additional information, consult a qualified service technician, service agency or your dealer.

### B. Tools and Supplies Needed

Before beginning the installation be sure that the following tools and building supplies are available.

Tape measure	Framing material
Pliers	Hammer
Phillips screwdriver	Manometer
Gloves	Framing square
Voltmeter	Electric drill and bits (1/4 in.)
Plumb line	Safety glasses
Level	Reciprocating saw
Flat blade screwdriver	
Non-corrosive leak check solution	
1/2 - 3/4 in. length, #6 or #8 Self-drilling screws	
Caulking material (300°F minimum continuous exposure rating)	
One 1/4 in. female connection (for optional fan).	

### C. Inspect Appliance and Components

- Carefully remove the appliance and components from the packaging.
- The vent system components and optional accessories may be shipped in separate packages.
- If packaged separately, the log set must be installed.
- Report to your dealer any parts damaged in shipment, particularly the condition of the glass.
- **Read all of the instructions before starting the installation. Follow these instructions carefully during the installation to ensure maximum safety and benefit.**

***WARNING! Risk of Fire or Explosion! Damaged parts could impair safe operation. DO NOT install damaged, incomplete or substitute components. Keep appliance dry.***

Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance or vent system component.
- Modification of the appliance or vent system.
- Installation other than as instructed by Hearth & Home Technologies.
- Improper positioning of the gas logs or the glass door.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.

**Any such action may cause a fire hazard.**

***WARNING! Risk of Fire, Explosion or Electric Shock! DO NOT use this appliance if any part has been under water. Call a qualified service technician to inspect the appliance and to replace any part of the control system and/or gas control which has been under water.***

### 3 Framing and Clearances

#### A. Appliance Dimension Diagram

Dimensions are actual appliance dimensions. Use for reference only.

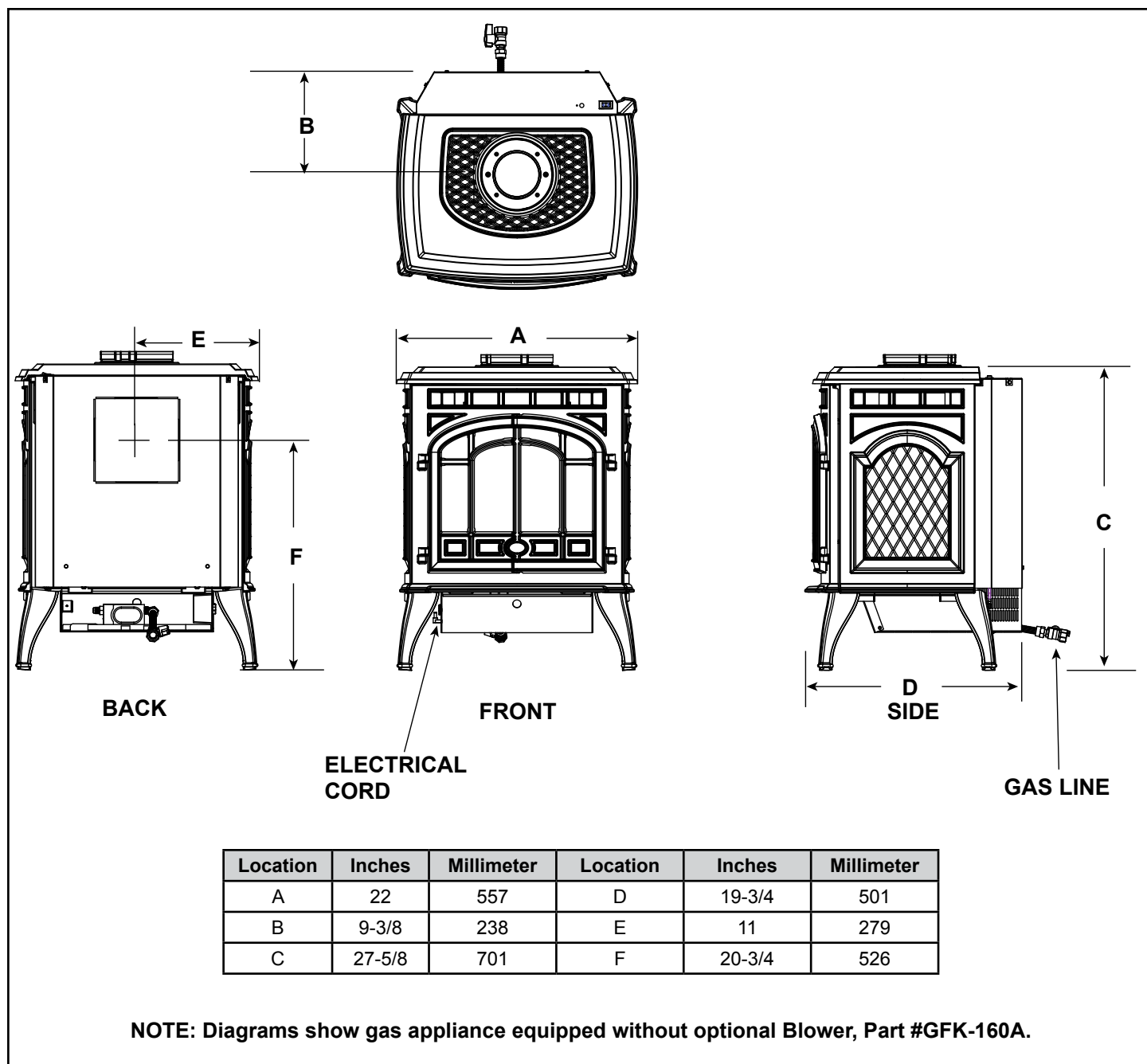


Figure 3.1 Appliance Dimensions

B. Clearances to Combustibles

When selecting a location for the appliance it is important to consider the required clearances to walls (see Figure 3.2).

**WARNING! Risk of Fire or Burns!** Provide adequate clearance around air openings and for service access. Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.

**NOTICE:** Illustrations reflect typical installations and are FOR DESIGN PURPOSES ONLY. Illustrations/diagrams are not drawn to scale. Actual installation may vary due to individual design preference.

**NOTICE:** Some carpet materials may be sensitive to radiant heat from the appliance causing discoloration or odor.

C. Hearth Extension/Floor Protection

**CAUTION! Risk of Fire or Injury!** Install appliance on a stable, level, platform or floor strong enough to support appliance without tipping.

A non-combustible hearth pad is not required. However, the floor beneath the appliance must be stable, level, and strong enough to support the appliance without a tipping hazard. It is permissible to place the appliance on carpet.

**NOTE:** Flooring beneath appliance may reach 90 degrees plus room ambient temperature. Check with flooring manufacturer for maximum temperature allowed on flooring surfaces.

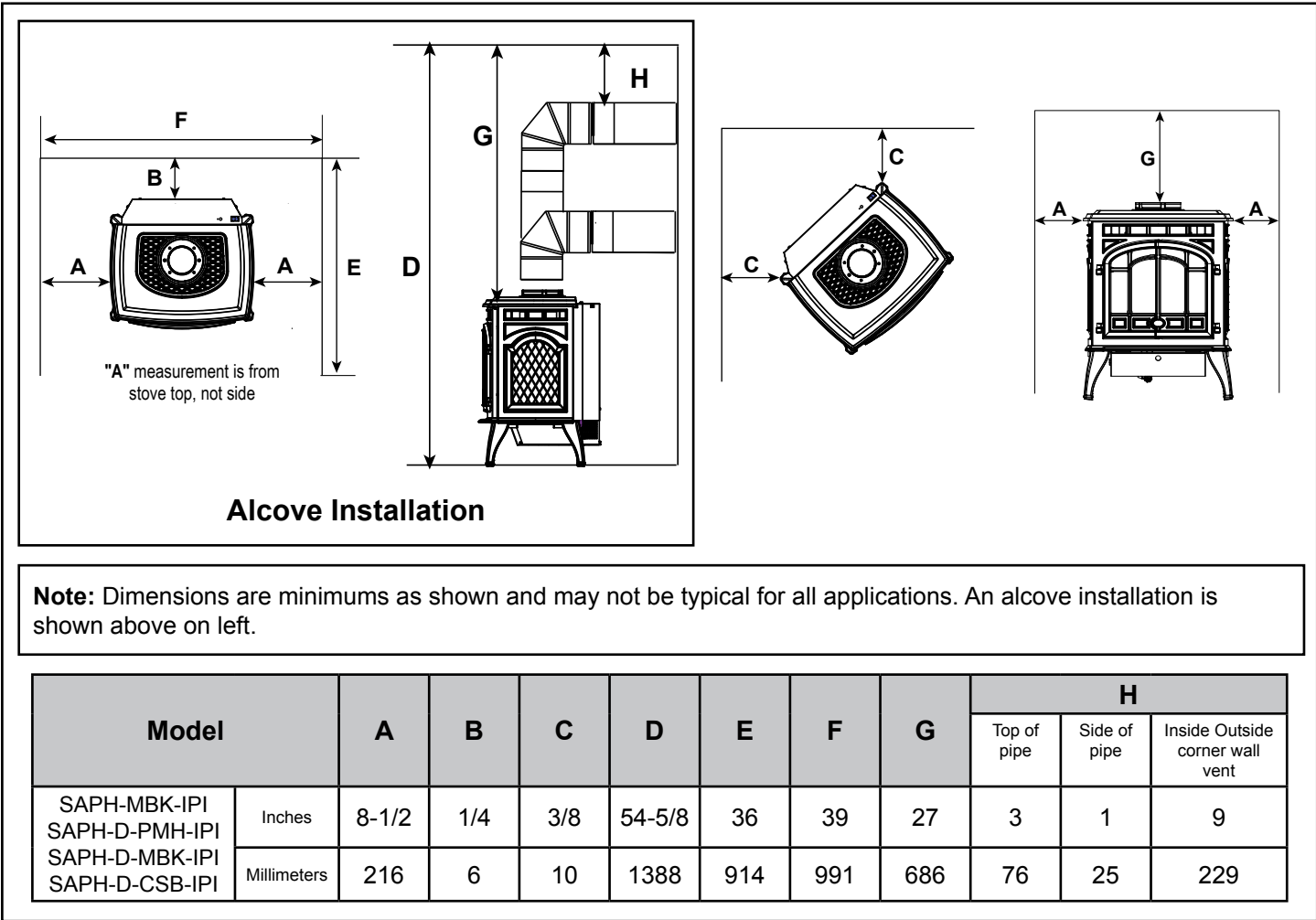




Figure 3.2 Appliance Locations

# 4 Termination Location and Vent Information

## A. Vent Termination Minimum Clearances


**WARNING**



**Fire Risk.**

Maintain vent clearance to combustibles as specified.

- **DO NOT** pack air space with insulation or other materials.

Failure to keep insulation or other materials away from vent pipe may cause overheating and fire.

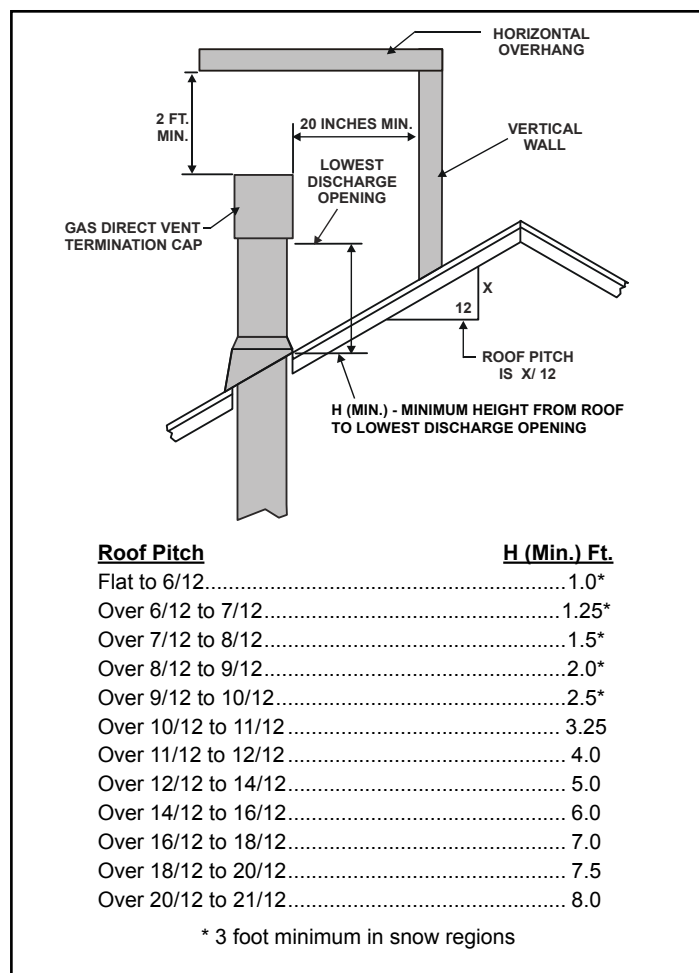


Figure 4.1 Minimum Height From Roof To Lowest Discharge Opening

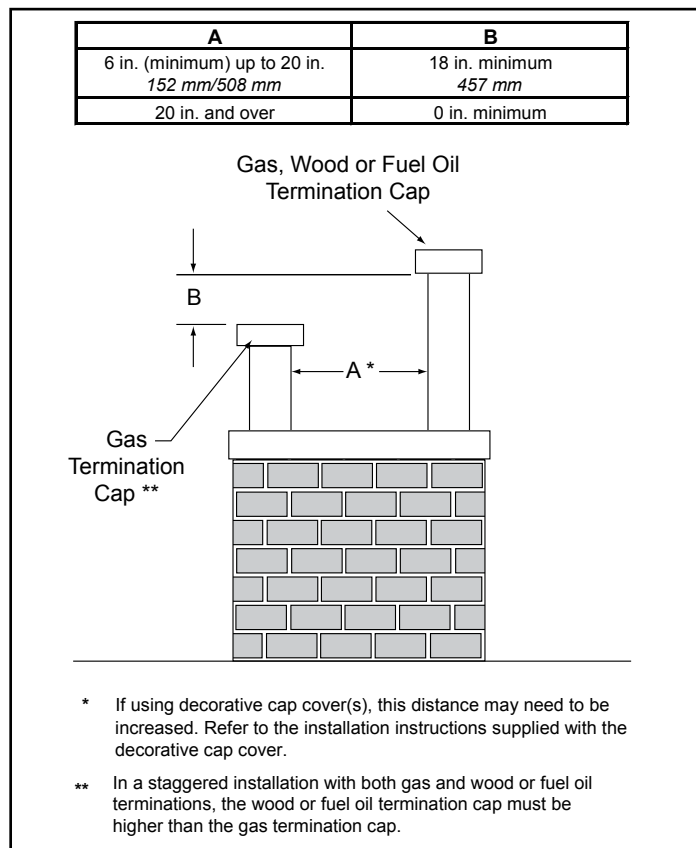
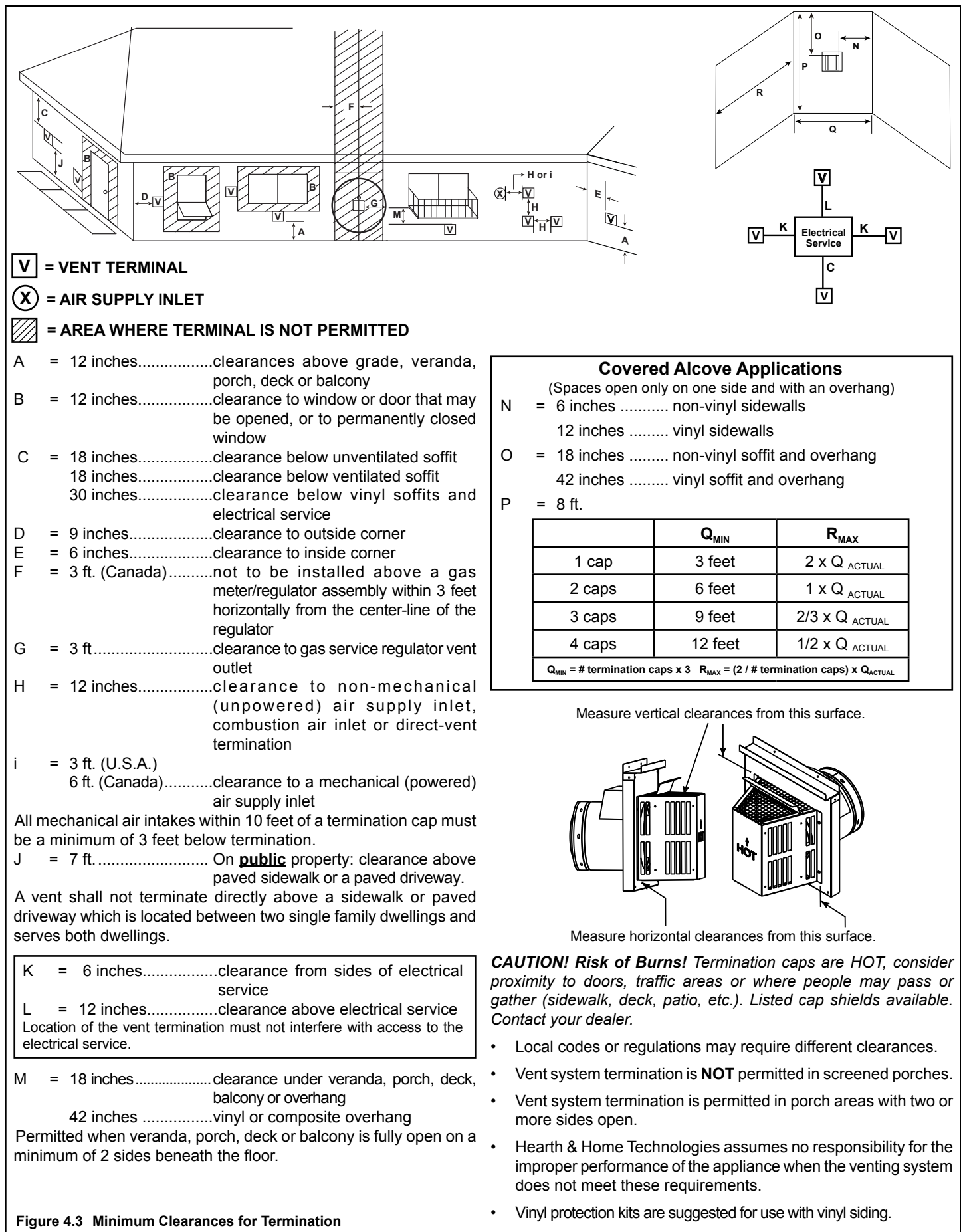


Figure 4.2 Staggered Termination Caps

## B. Chimney Diagram



## C. Approved Pipe

This appliance is approved for use with Hearth & Home Technologies SLP venting systems. Refer to Section 11.A for vent component information and dimensions.

**DO NOT** mix pipe, fittings or joining methods from different manufacturers.

The pipe is tested to be run inside an enclosed wall. There is no requirement for inspection openings at each joint within the wall.

***WARNING! Risk of Fire or Asphyxiation.*** *This appliance requires a separate vent. **DO NOT** vent to a pipe serving a separate solid fuel burning appliance.*

### **DO NOT USE FIELD-FABRICATED VENTING COMPONENTS.**

This product is approved to be vented either horizontally, through the side wall or vertically through the roof. You may vent through a Class A or masonry chimney if an approved adapter is used.

This appliance is a direct vent heater. All combustion air must come directly from the outside of the building. The vent pipe for this unit consists of an inner and an outer pipe. The inner pipe carries the appliance exhaust out of the system, and the outer pipe brings fresh combustion air into the appliance.

- A round support box/wall thimble or heat shield is required when the venting passes through a combustible wall.
- A support box or ceiling firestop is required when the venting passes through a ceiling.
- Roof flashing and a storm collar are required when venting passes through the roof.
- Follow instructions provided with the venting for installation of these items.



## D. Use of Elbows

Diagonal runs have both vertical and horizontal vent aspects when calculating the effects. Use the rise for the vertical aspect and the run for the horizontal aspect. See Figure 4.4.

Two 45° elbows may be used in place of one 90° elbow. On 45° runs, one foot of diagonal is equal to 8-1/2 in. (216 mm) horizontal run and 8-1/2 in. (216 mm) vertical run. A length of straight pipe is allowed between two 45° elbows. See Figure 4.4.

Figure 4.5 shows the vertical and horizontal offsets for SLP elbows.

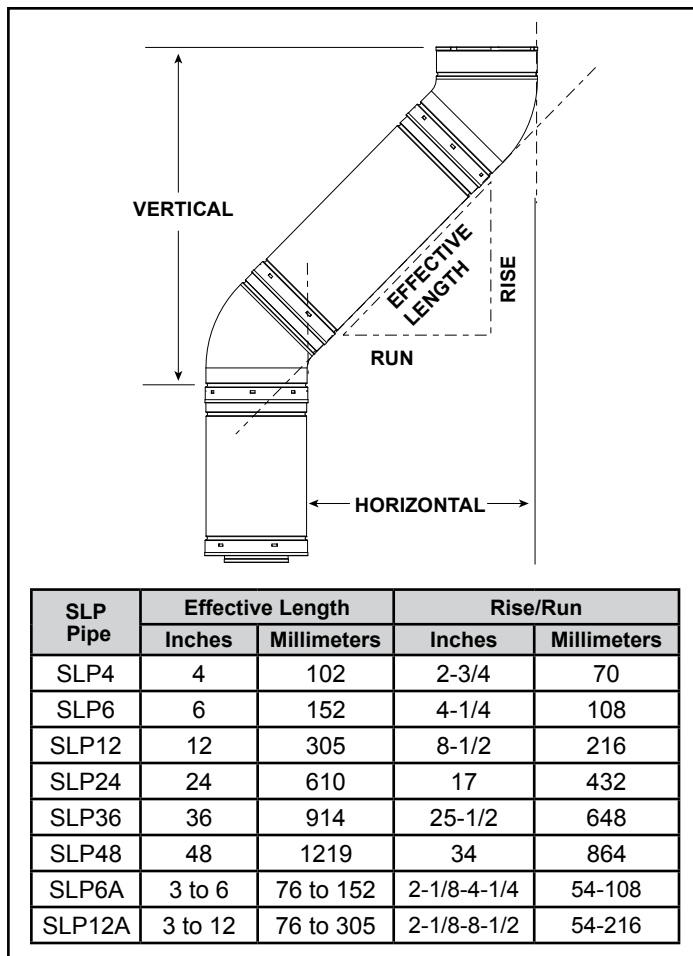


Figure 4.4

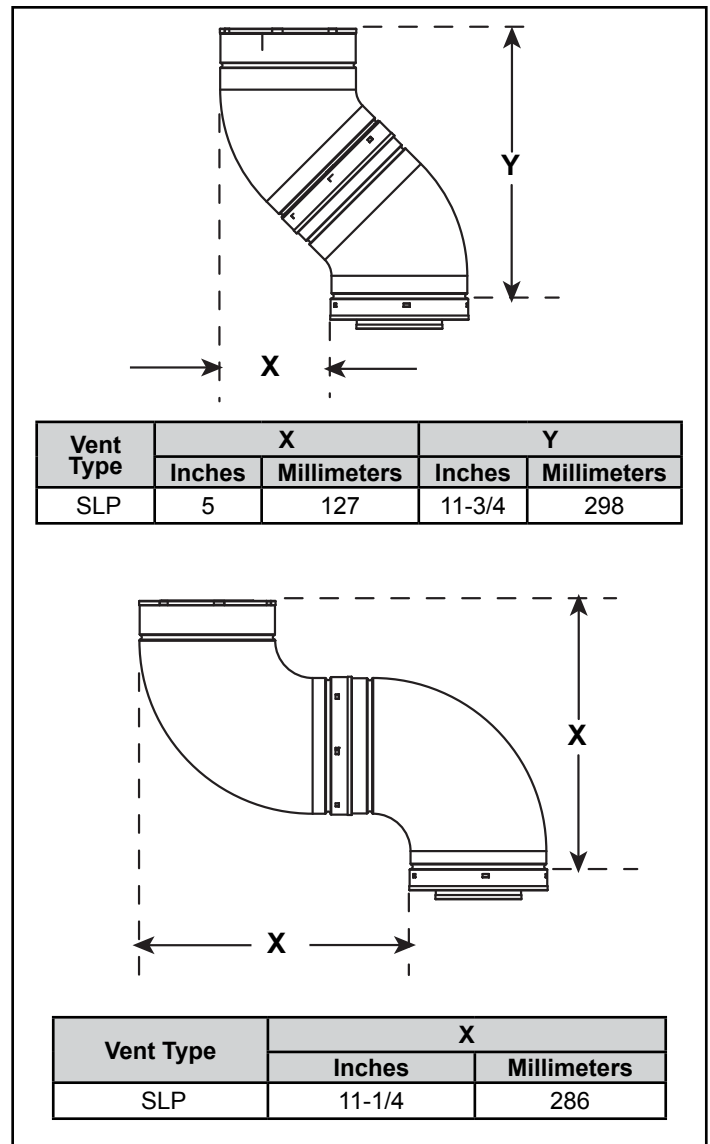


Figure 4.5 Vertical and Horizontal Offset for SLP Elbows

## E. Measuring Standards

Vertical and horizontal measurements listed in the vent diagrams were made using the following standards:

- Pipe measurements are shown using the effective length of pipe. See Figure 11.1 for SLP for information on effective length of pipe components.
- Horizontal terminations are measured to the outside mounting surface (flange of termination cap) (see Figure 4.3).
- Vertical terminations are measured to bottom of termination cap.
- Horizontal pipe installed level with 1/4 inch rise per foot.

## F. Venting Guidelines for Horizontal Runs

Max Horizontal Run, Rear Vent (No Rise)	14 in. (356 mm) Snorkel kit and derating orifice must be used. See Figure 4.6.
Max Horizontal Run	14 ft (4.3 m) when vertical rise is 10 ft (3m)
Max Horizontal Run Rear Vent with 45° Elbow (No Rise)	14 in. (356 mm) Snorkel kit and derating orifice must be used. See Figure 4.6.
Rear Vent with Vertical Rise	Min of 2 ft vertical (610 mm) must be used prior to any horizontal run. Derating orifice must be used.
Horizontal Run requires a 1/4 in. (6mm) rise for every 1 ft toward the termination.	
Horizontal Run requires a non-combustible support every 3 ft (914 mm), i.e., plumbing tape	
A vent run off the top of the appliance with more than one 90° elbow or two 45° elbows must have a minimum vertical of 2 feet.	

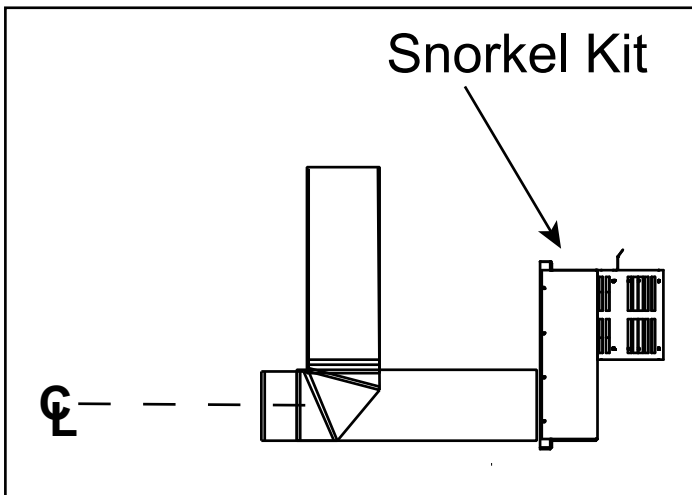


Figure 4.6

## G. Vent Diagrams

To replace the first 90° starter elbow with two 45° elbows, refer to Figure 4.7. All other 90° elbows can be replaced with two 45° elbows.

General Rules:

- SUBTRACT 3 ft. from the total H measurement for each 90° elbow installed horizontally.
- SUBTRACT 1 ft. from the total H measurement for each 45° elbow installed horizontally.
- A maximum of three 90° elbows (or six 45° elbows) may be used in any vent configuration. Some elbows may be installed horizontally. See specific vent diagrams.
- When penetrating a combustible wall, a wall shield firestop must be installed.
- When penetrating a combustible ceiling, a ceiling firestop must be installed.

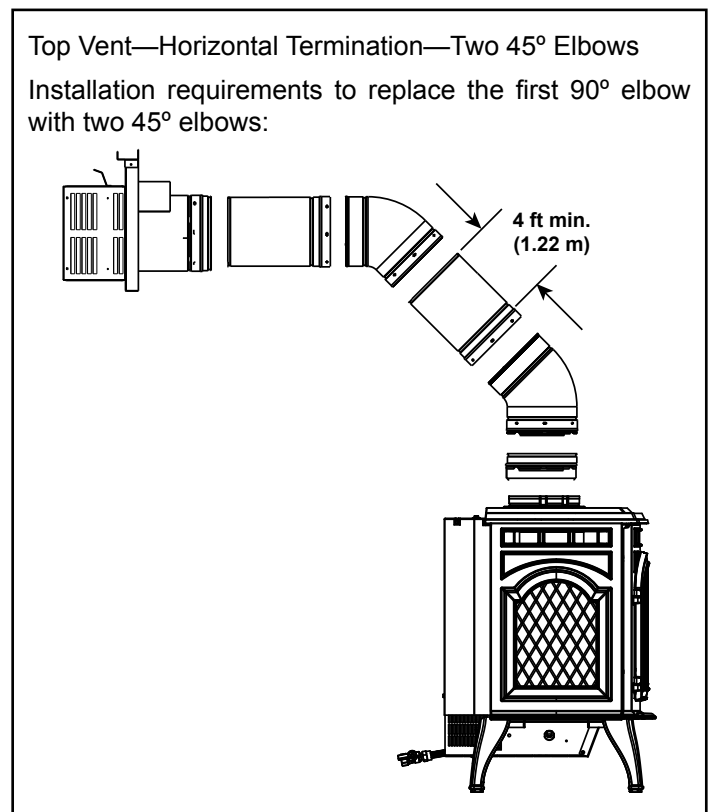


Figure 4.7

## Top Vent - Horizontal Termination

### One Elbow

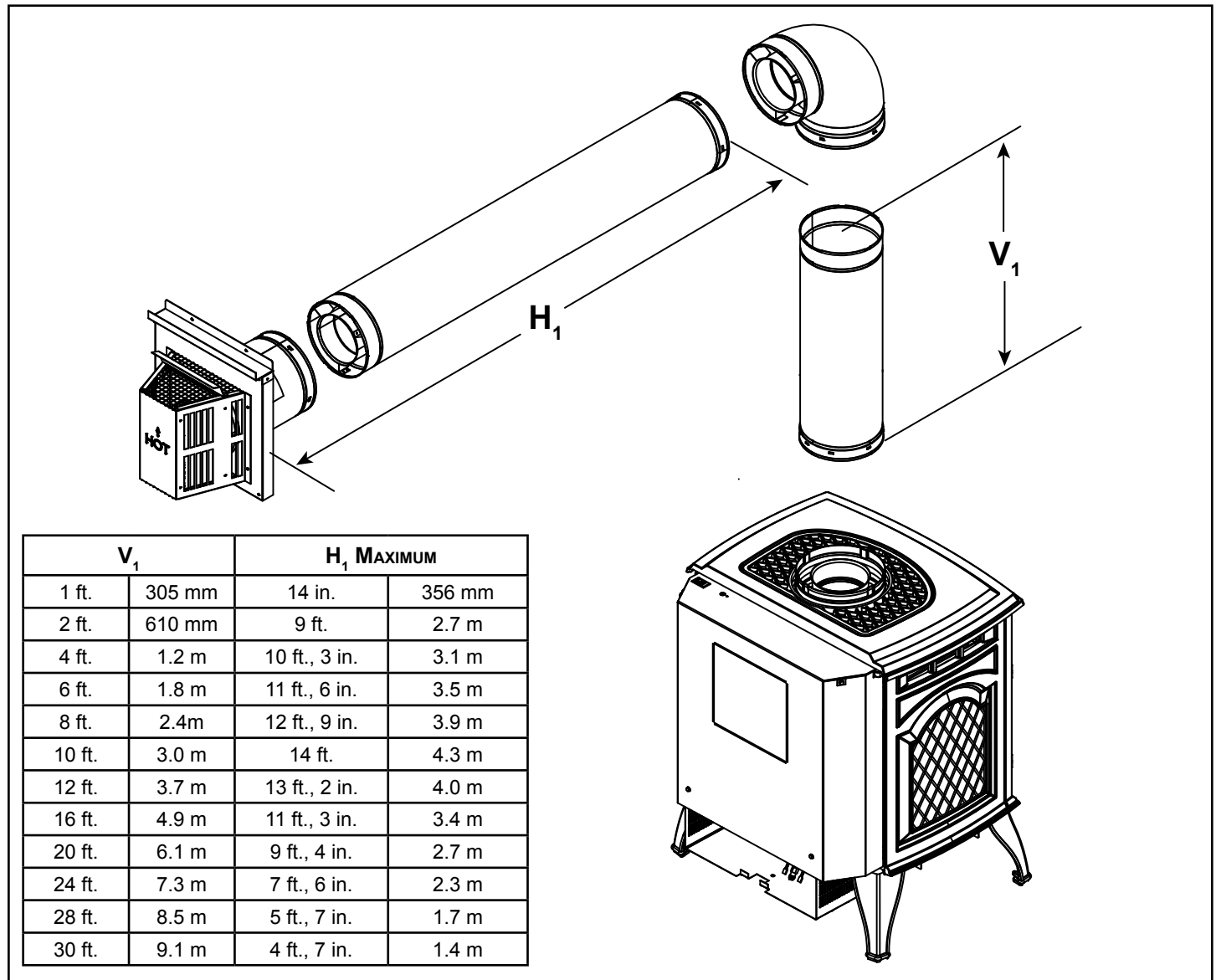


Figure 4.8

## Two Elbows

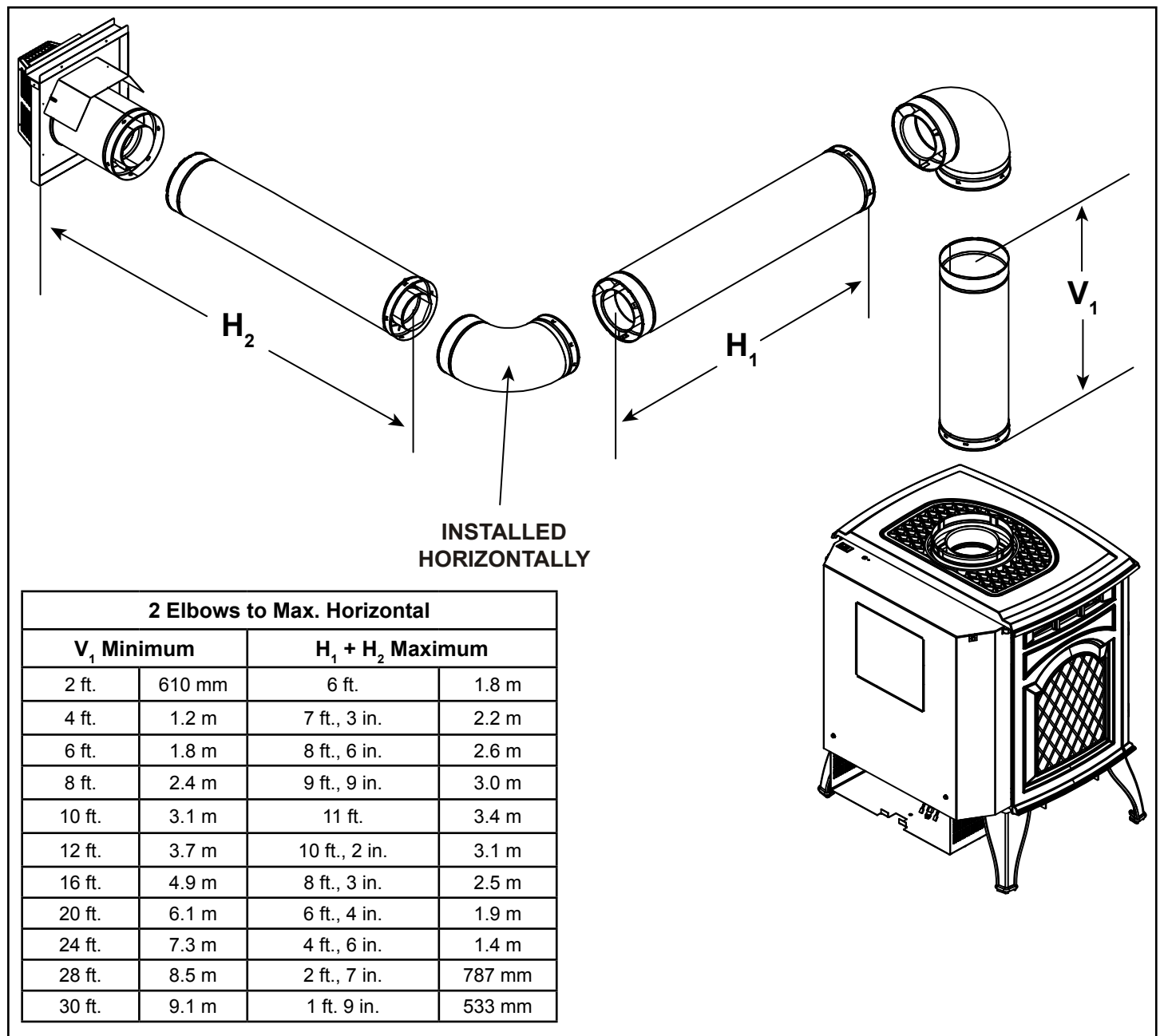


Figure 4.9

## Top Vent - Horizontal Termination - (continued)

### Three Elbows

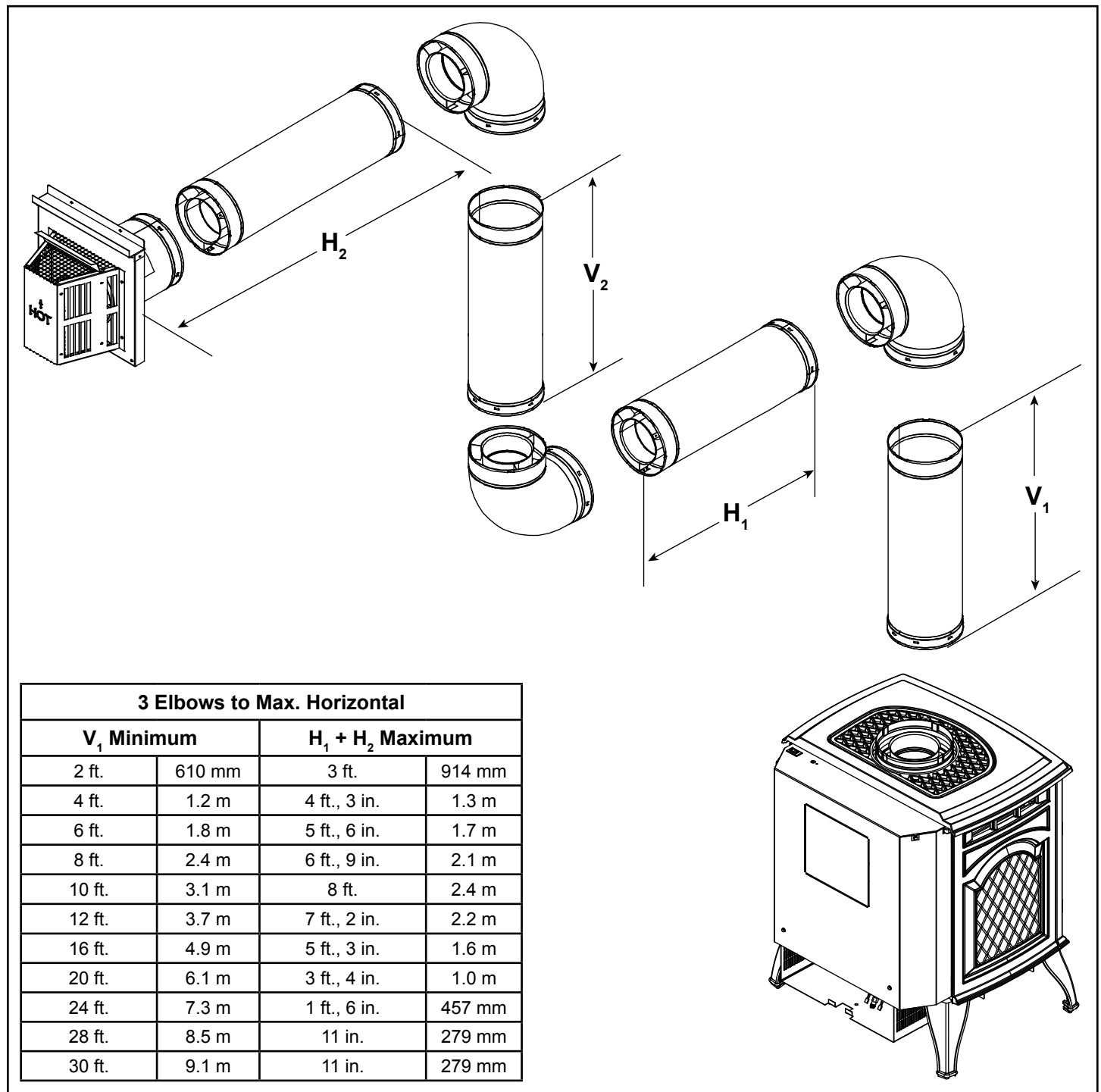


Figure 4.10

## Top Vent - Vertical Termination

No Elbow

$V_1 = 30 \text{ ft. Max. (9.1 m)}$   
 $V_1 = 6 \text{ ft. Min. (1.8 m)}$

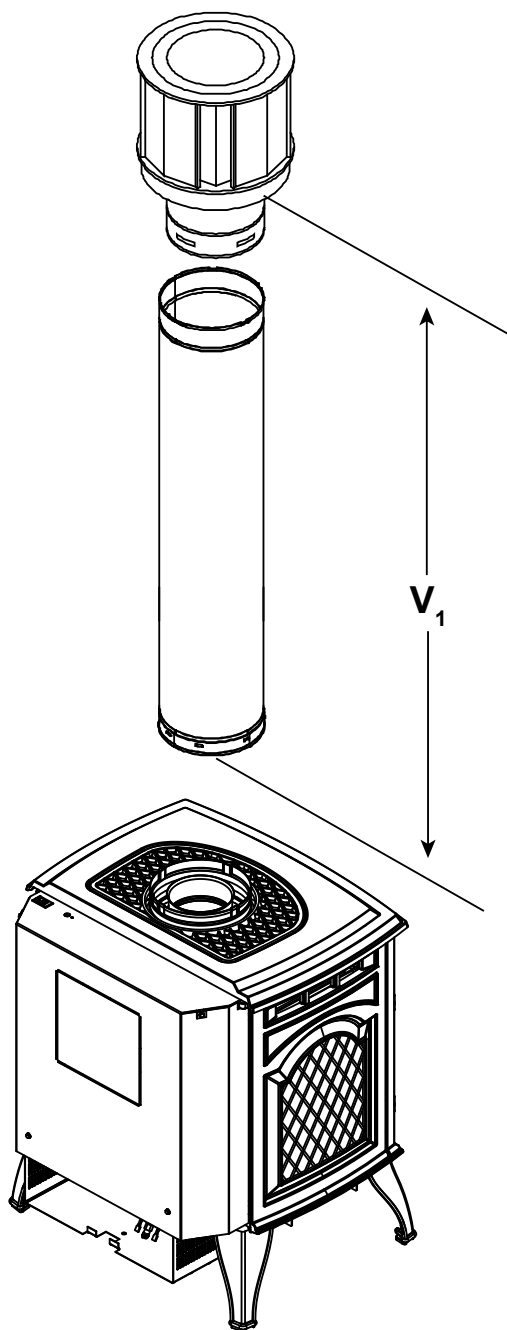


Figure 4.11

# Two Elbows

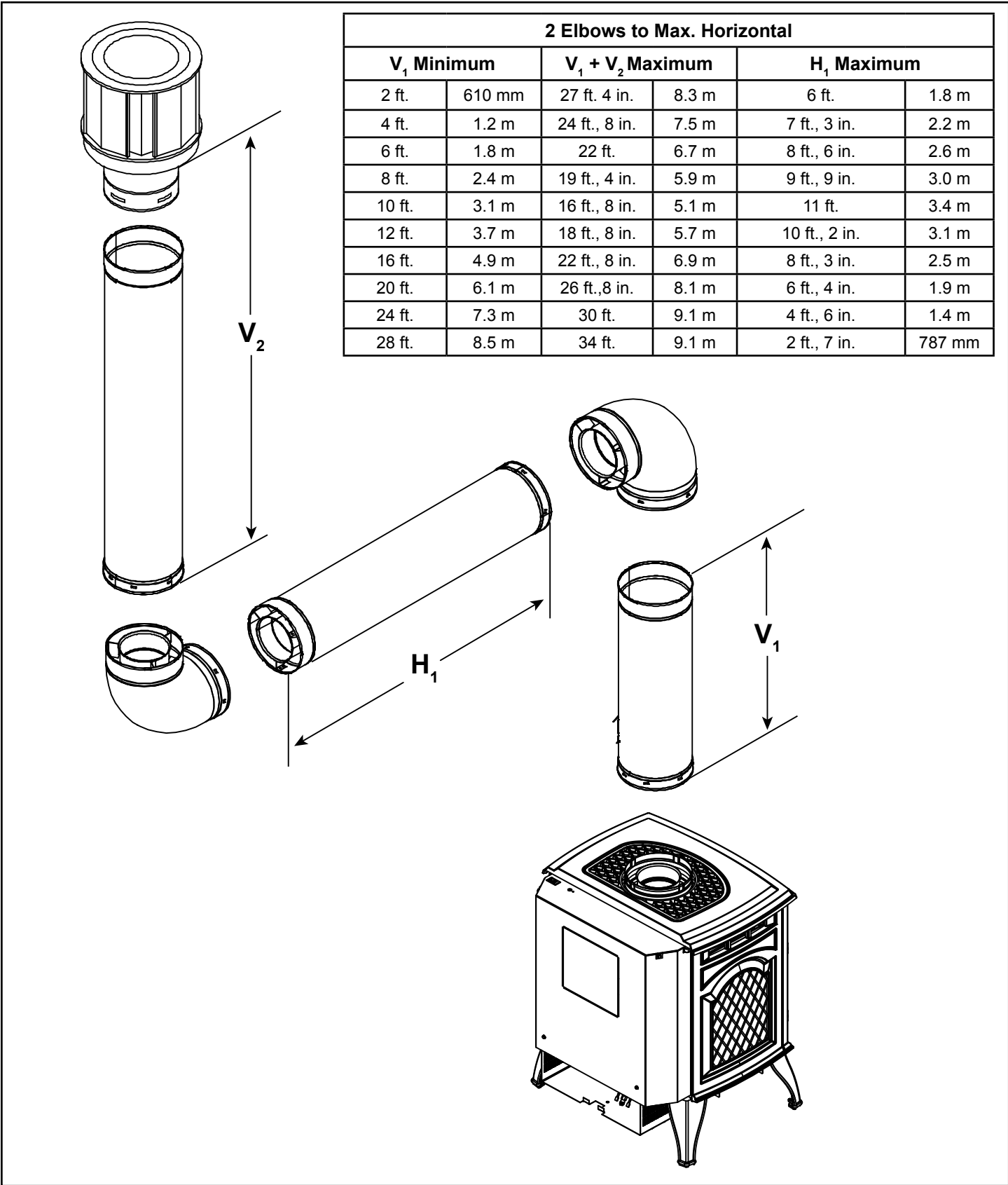


Figure 4.12



## Top Vent - Vertical Termination - (continued)

### Three Elbows

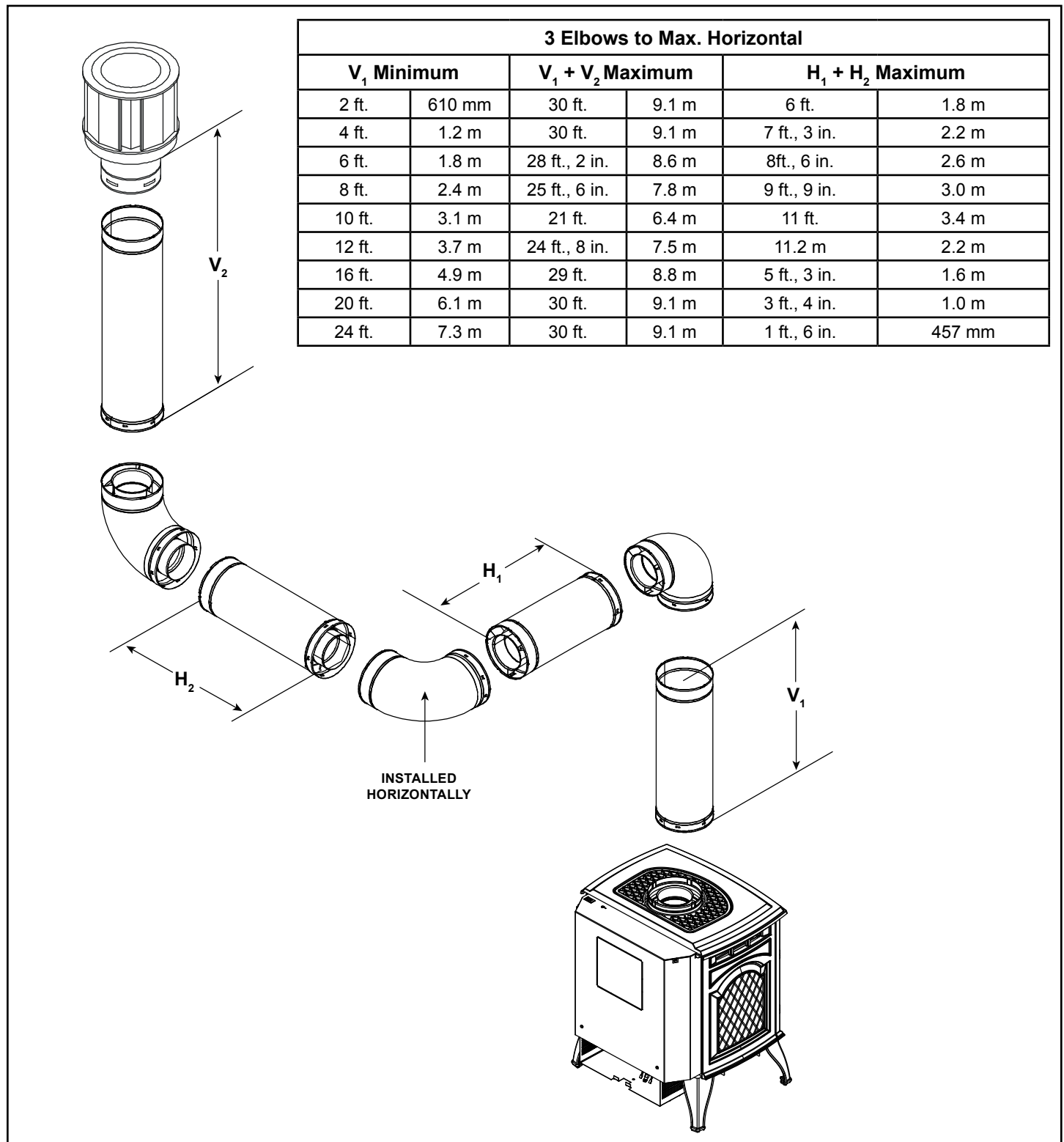


Figure 4.13

## Rear Vent - Horizontal Termination

$H_1 = 14 \text{ in. (356 mm) Maximum}$

### No Elbow

**Note:** A derating orifice is required with this application and is included in the Rear Vent Kit.

**Note:** All horizontal vent pipe runs must have 1/4 inch rise per foot.

**NOTICE:** An SLK-SNKD is required for this vent configuration.

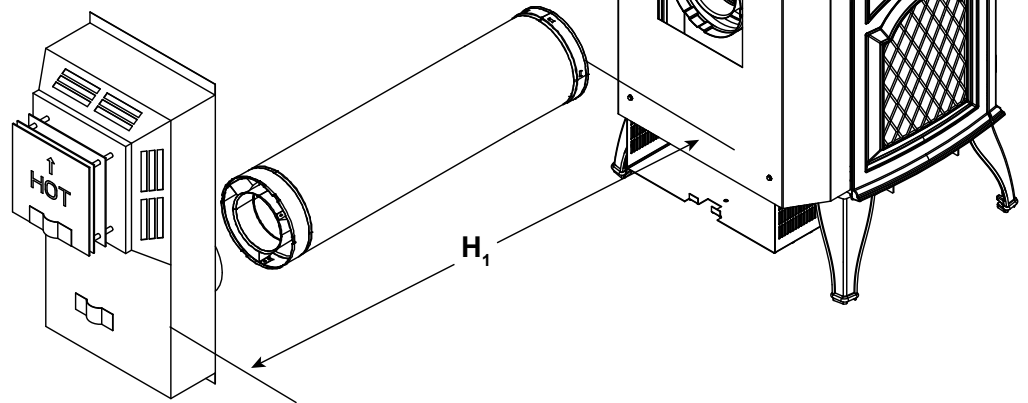


Figure 4.14

## Rear Vent - Horizontal Termination

$H_1 = 14 \text{ in. (356 mm) Maximum}$

### One 45° Elbow

**Note:** A derating orifice is required with this application and is included in the Rear Vent Kit.

**Note:** All horizontal vent pipe runs must have 1/4 inch rise per foot.

**NOTICE:** An SLK-SNKD is required for this vent configuration.

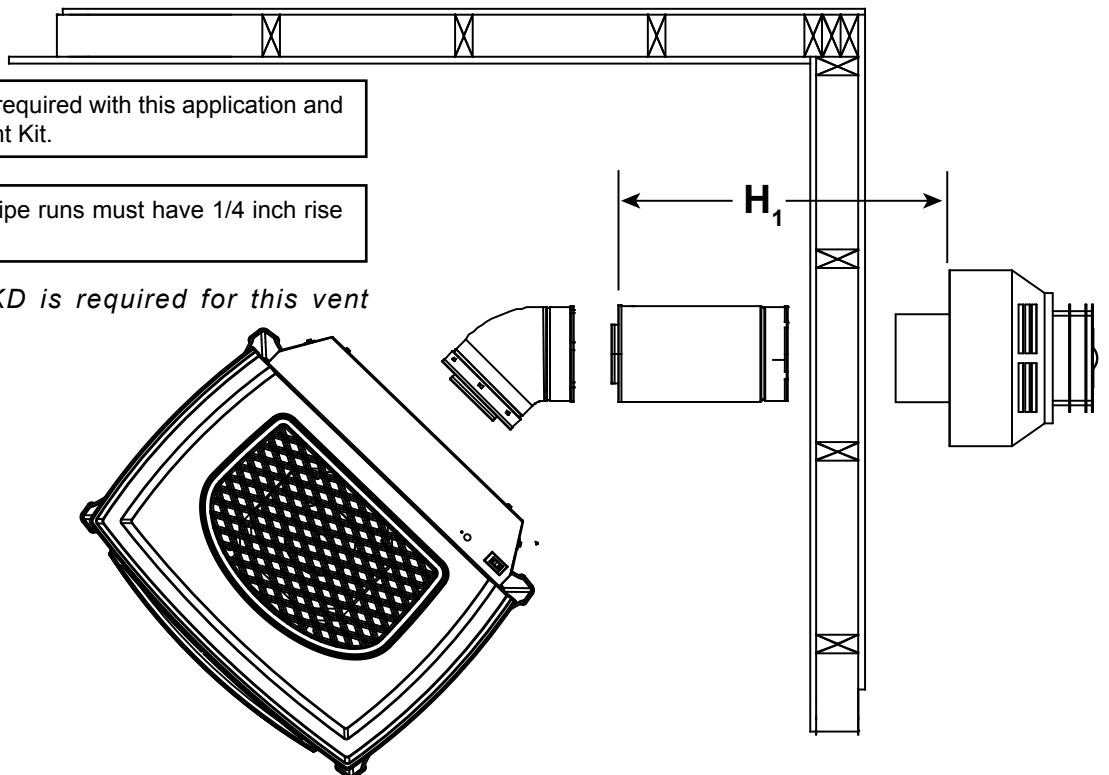


Figure 4.15

## Rear Vent - Horizontal Termination - (continued)

### Two Elbows

2 Elbows to Max. Horizontal							
$V_1$ Minimum		$H_1$ Minimum		$H_1 + H_2$ Maximum		$H_1$ Maximum	
2 ft.	610 mm	6 in.	152 mm	6 ft.	1.8 m	14 in.	357 mm
4 ft.	1.2 m	6 in.	152 mm	7 ft., 3 in.	2.2 m	14 in.	357 mm
6 ft.	1.8 m	6 in.	152 mm	8-ft., 6 in.	2.6 m	14 in.	357 mm
8 ft.	2.4 m	6 in.	152 mm	9 ft., 9 in.	3.0 m	14 in.	357 mm
10 ft.	3.1 m	6 in.	152 mm	11 ft.	3.4 m	14 in.	357 mm
12 ft.	3.7 m	6 in.	152 mm	10 ft., 2 in.	3.1 m	14 in.	357 mm
16 ft.	4.9 m	6 in.	152 mm	8 ft., 3 in.	2.5 m	14 in.	357 mm
20 ft.	6.1 m	6 in.	152 mm	6 ft., 4 in.	1.9 m	14 in.	357 mm
24 ft.	7.3 m	6 in.	152 mm	4 ft., 6 in.	1.4 m	14 in.	357 mm
28 ft.	8.5 m	6 in.	152 mm	2 ft., 7 in.	787 mm	14 in.	357 mm

**Note:** A derating orifice is required with this application and is included in the Rear Vent Kit.

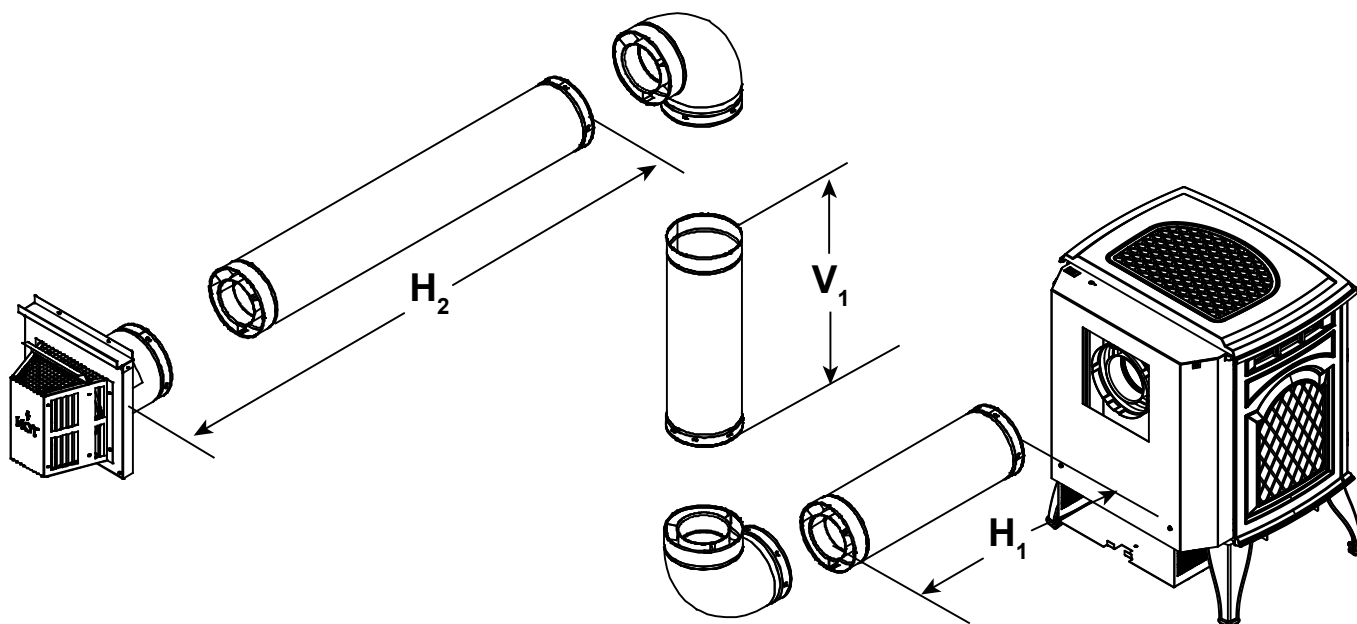


Figure 4.15

## Three Elbows

3 Elbows to Max. Horizontal							
$V_1$ Minimum		$H_1$ Minimum		$H_1$ Maximum		$H_{TOTAL}$	
2 ft.	610 mm	6 in.	152 mm	14 in.	357 mm	3 ft.	914 mm
4 ft.	1.2 m	6 in.	152 mm	14 in.	357 mm	4 ft., 3 in.	1.3 m
6 ft.	1.8 m	6 in.	152 mm	14 in.	357 mm	5 ft., 6 in.	1.7 m
8 ft.	2.4 m	6 in.	152 mm	14 in.	357 mm	6 ft., 9 in.	2.1 m
10 ft.	3.1 m	6 in.	152 mm	14 in.	357 mm	8 ft.	2.4 m
12 ft.	3.7 m	6 in.	152 mm	14 in.	357 mm	7 ft., 2 in.	2.2 m
16 ft.	4.9 m	6 in.	152 mm	14 in.	357 mm	5 ft., 3 in.	1.6 m
20 ft.	6.1 m	6 in.	152 mm	14 in.	357 mm	3 ft., 4 in.	1.0 m
24 ft.	7.3 m	6 in.	152 mm	14 in.	357 mm	1 ft., 6 in.	457 mm

**Note:** A derating orifice is required with this application and is included in the Rear Vent Kit.

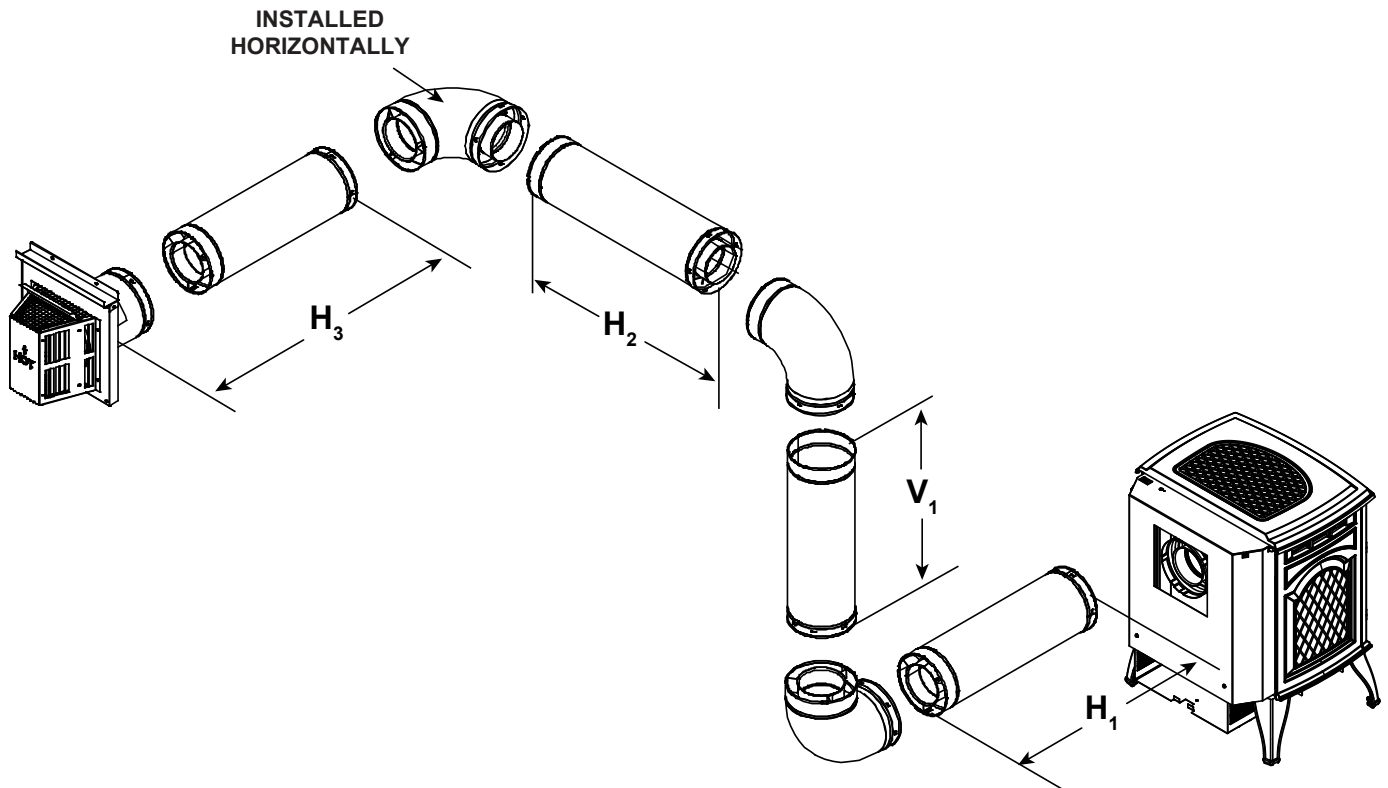


Figure 4.17

Rear Vent - Vertical Termination

One Elbow

H <sub>1</sub> Minimum		H <sub>1</sub> Maximum		V <sub>1</sub> Minimum		V <sub>1</sub> Maximum	
6 in.	152 mm	14 in.	357 mm	6 ft.	1.8 m	40 ft.	12.2 m

**Note:** A derating orifice is required with this application and is included in the Rear Vent Kit.

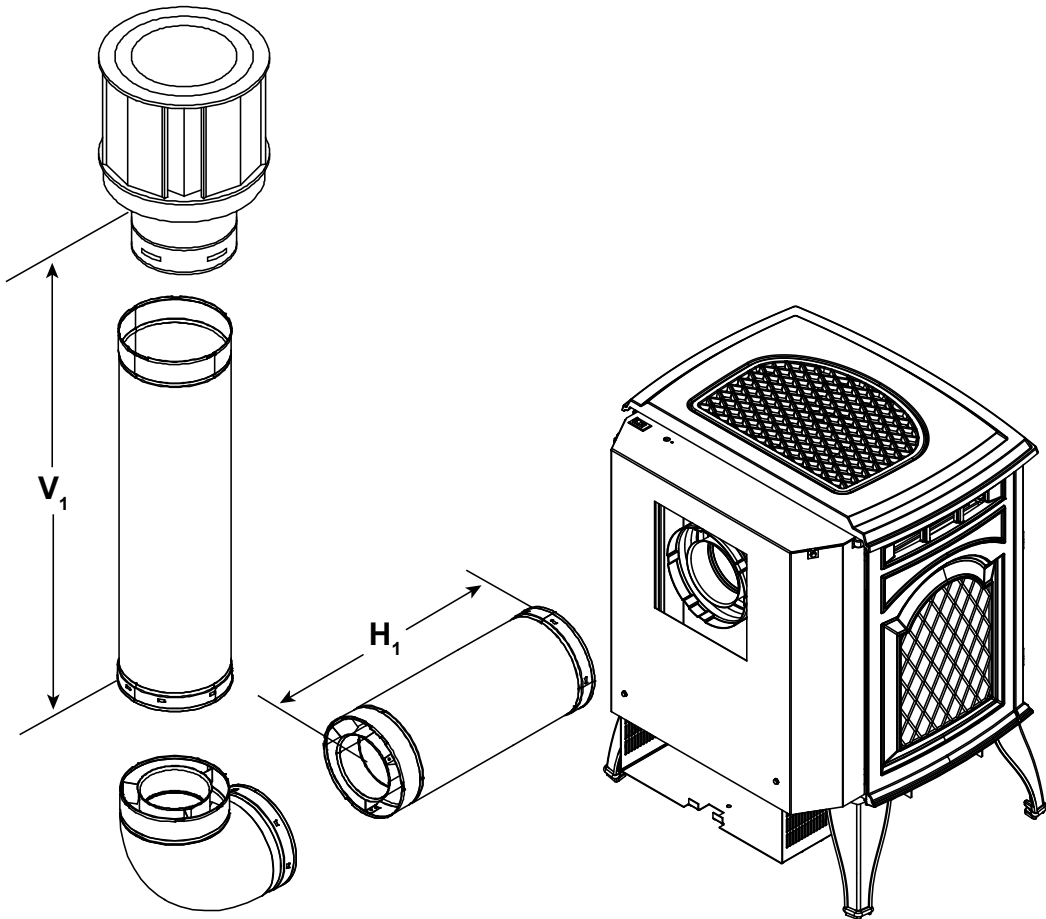


Figure 4.18

## Rear Vent - Vertical Termination - (continued)

### Three Elbows

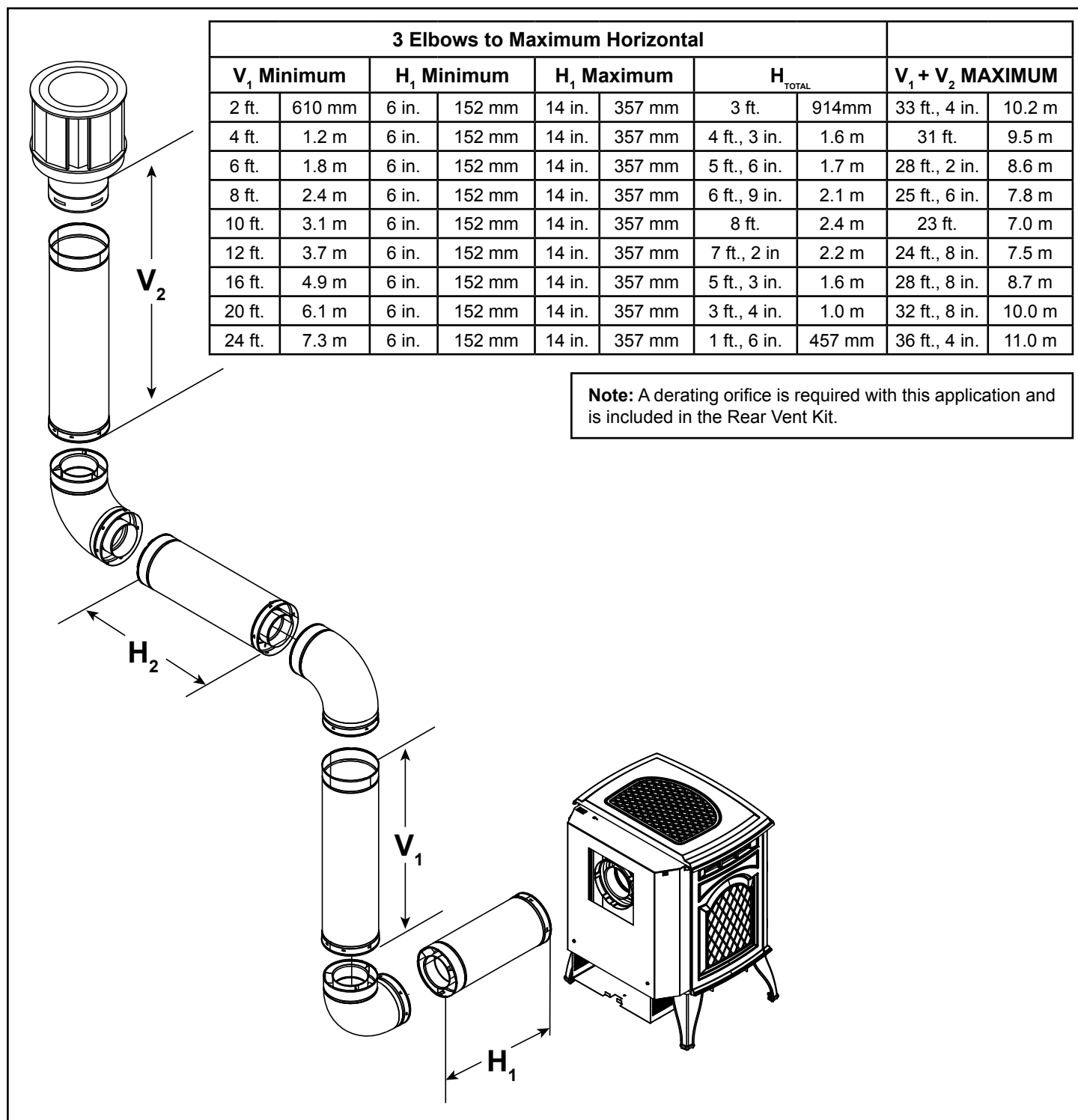


Figure 4.19

## Class A Metal Chimney

Prior to installing the gas stove, ensure that the existing chimney is functionally sound and clean.

- Have the chimney and adjacent structure inspected and cleaned by qualified professionals. Hearth & Home Technologies recommends that NFI or CSIA certified professionals, or technicians under the direction of certified professionals, conduct a minimum of a NFPA 211 Level 2 inspection of the chimney.
- Replace component parts of the chimney and fireplace as specified by the professionals.

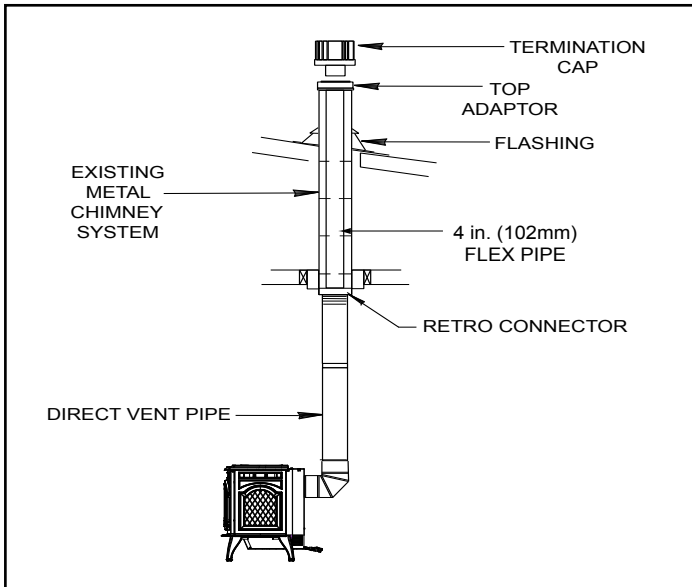


Figure 4.20

1. Remove existing chimney cap.
2. Measure the distance from the top of the chimney to the bottom of the ceiling support box, add 3 in. (76mm) to this measurement, and cut a section of 4 in. (101mm) flex pipe to that length (the flex should be fully extended).
3. Connect the end of the flex pipe section to the underside of the top adapter, using four sheet metal screws. See Figure 4.21.
4. Pass the flex pipe down through the center of the chimney system, and center the top adapter on the top of the chimney pipe. Drill four 1/8 in. (3mm) diameter holes through the top adapter, and into the chimney top. Ensure that you are drilling into the metal on the chimney. Twist lock the high wind termination cap onto the top adapter. See Figure 4.22 and Figure 4.23.

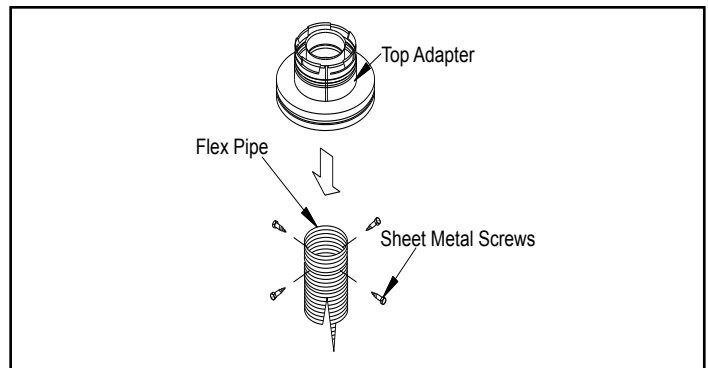


Figure 4.21

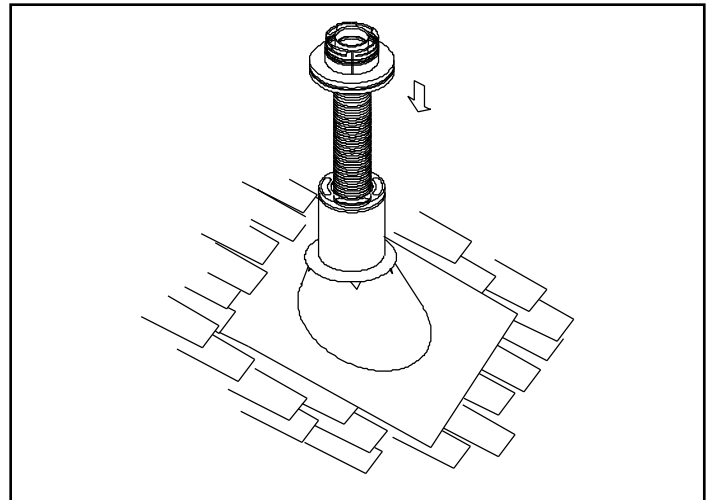


Figure 4.22

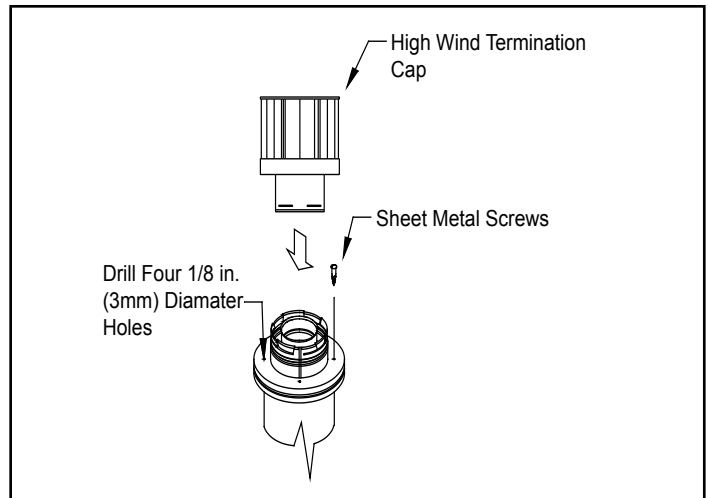


Figure 4.23

5. Pull the flex pipe down through the ceiling support box, until it protrudes approximately 3 in. (76mm). Connect the flex pipe to the retro connector, and attach with sheet metal screws.
6. Push the flex pipe back up into the ceiling support box, center the retro connector, and attach it to the support box with sheet metal screws.
7. The connection between the appliance and the retro connector may be completed with sections of direct vent pipe.



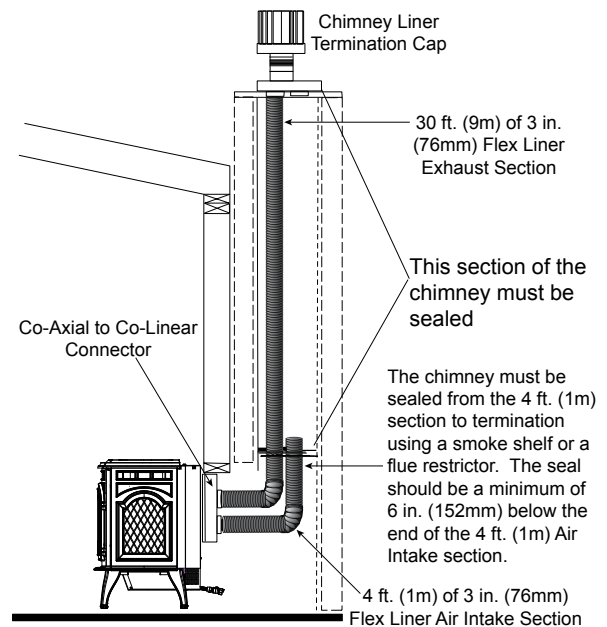
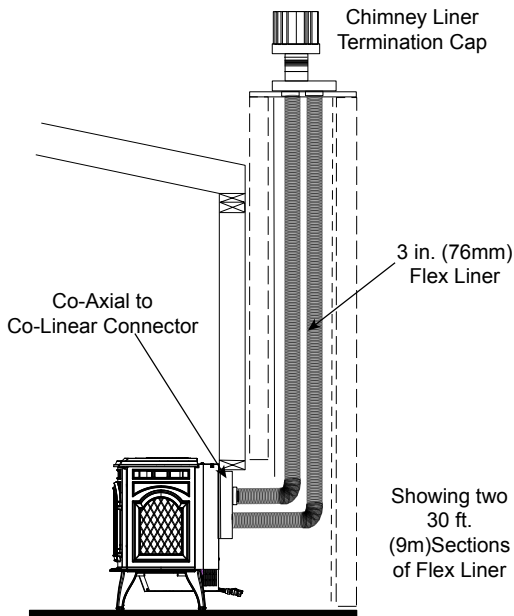
## Existing Masonry Chimney

Prior to installing the gas stove, ensure that the existing chimney is functionally sound and clean.

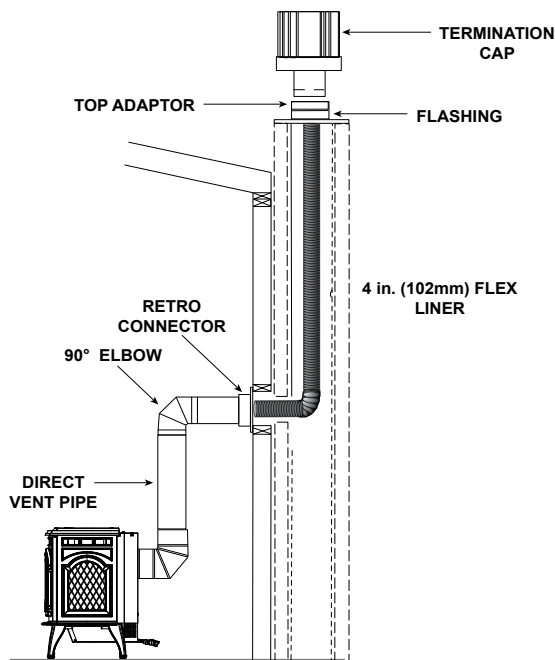
- Have the chimney and adjacent structure inspected and cleaned by qualified professionals. Hearth & Home Technologies recommends that NFI or CSIA certified professionals, or technicians under the direction of certified professionals, conduct a minimum of a NFPA 211 Level 2 inspection of the chimney.
- Replace component parts of the chimney and fireplace as specified by the professionals.

### Type A & B Co-Axial to Co-Linear

**See COAXIAL/COLINEAR Section and Figure 4.31.**



### Type C - Up & Out Installation



### Type D - Hearth Mount

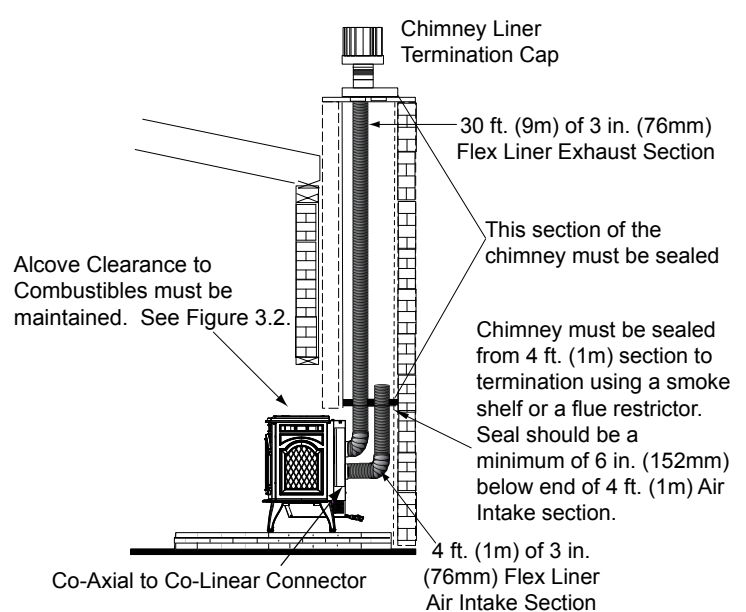


Figure 4.24

1. Before cutting any holes, assemble the desired sections of direct vent pipe to determine the center of the masonry penetration.
2. Once the center point of the penetration has been determined, cut a 6 in. (152mm) diameter hole in the masonry. If the hole is too large, the retro connector might not mount properly; if the hole is too small, the appliance might starve for intake air. If there is a frame wall in front of the masonry wall, cut and frame a 10 in. (254mm) square opening in the wall (centered around the 6 in. (152mm) masonry opening). If there is sheet rock only (no studs) in front of the masonry the 10 in. (254mm) opening is still needed, but does not need to be framed. If the hole is framed a wall thimble is required. This allows the retro connector to mount directly on the masonry and provide the correct clearances to combustibles. See Figure 4.25.

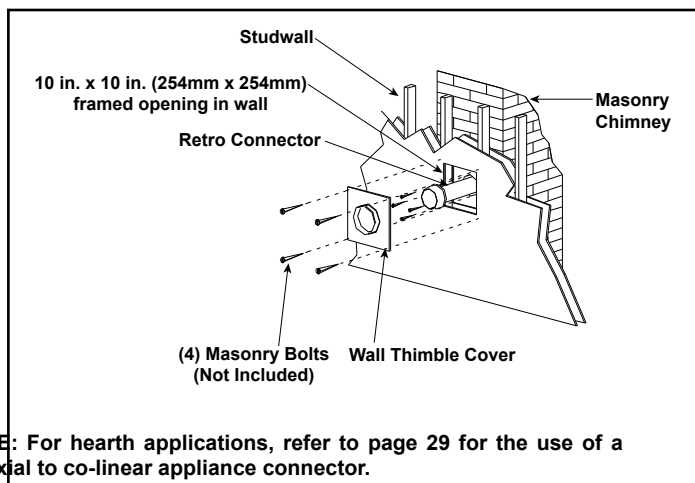


Figure 4.25

3. Secure the flashing to the top of the masonry chimney using a bead of non-hardening sealant-adhesive. If the flashing is larger than the top of the chimney, cut and fold flashing as needed to fit chimney. See Figure 4.26.

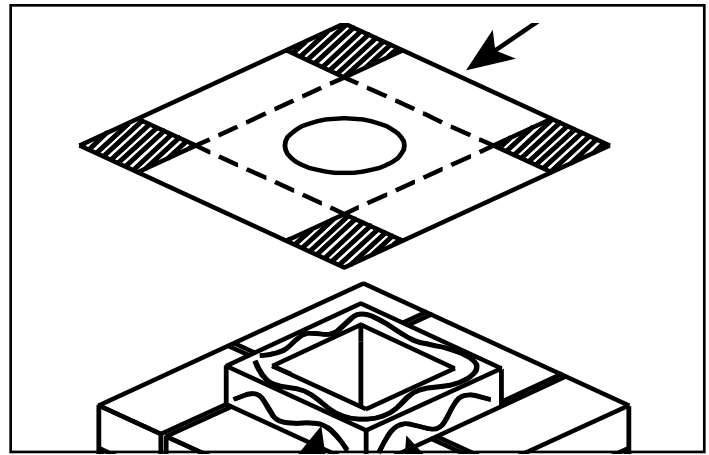
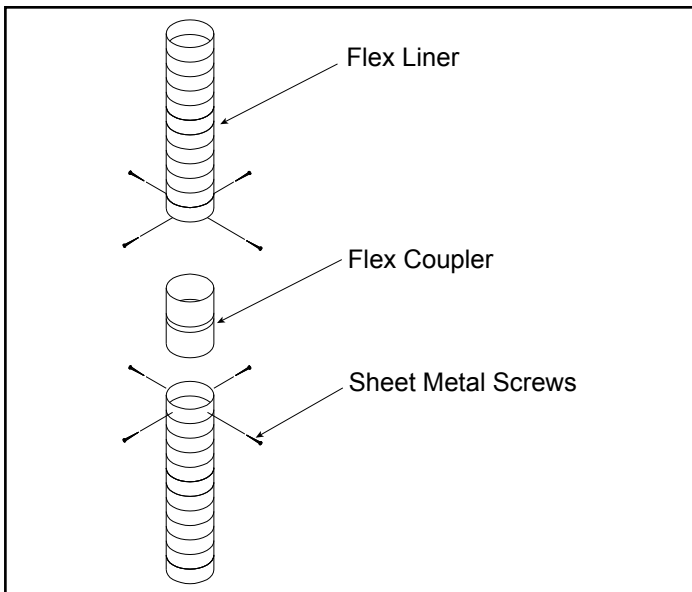


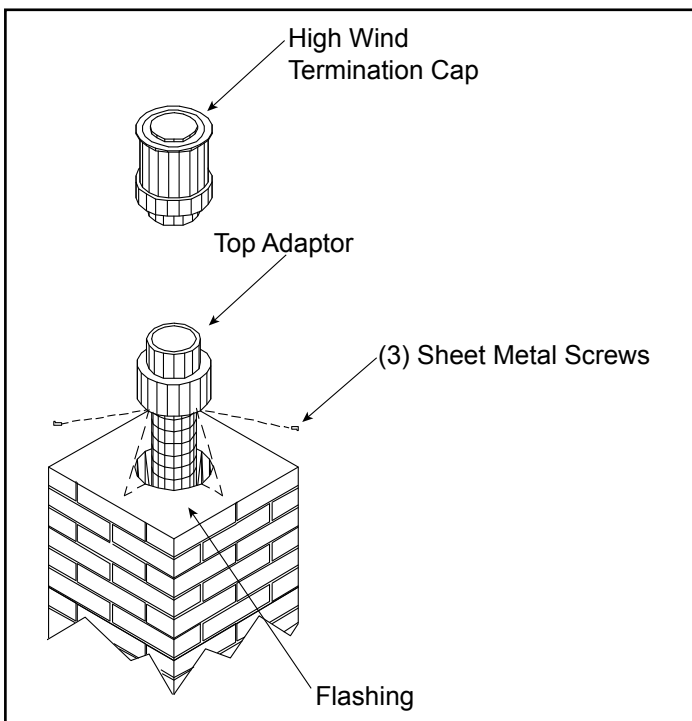
Figure 4.26

4. To determine the length of flex needed, measure from 3 in. (76mm) above the top of the flashing down to the level of the opening. Add the distance from the center of the chimney out through the wall. Cut a piece of 4 in. (102mm) flex to this length (extended to its nominal length). Be sure to leave 2-3 in. (51-76mm) of flex above the existing chimney to allow for connection to the termination kit.
  5. Connect the flex liner to the top adapter using three sheet metal screws. See Figure 4.21.
  6. Feed the flex liner through the flashing into the chimney. Carefully feed the flex liner down the chimney to the bottom and out the opening in the masonry wall, forming an angle to line up the flex liner with the vent opening on the appliance.
- WARNING! Risk of Fire, Explosion or Asphyxiation!**  
 Improper support may allow vent to sag and separate. Use vent run supports and connect vent sections per installation instructions. **DO NOT** allow vent to sag below connection point to appliance.
7. If additional lengths of flex liner are needed to span the chimney height, use a flex coupler to connect the pieces of flex liner together. Connect the flex to the coupler by using four sheet metal screws for each side. See Figure 4.27.



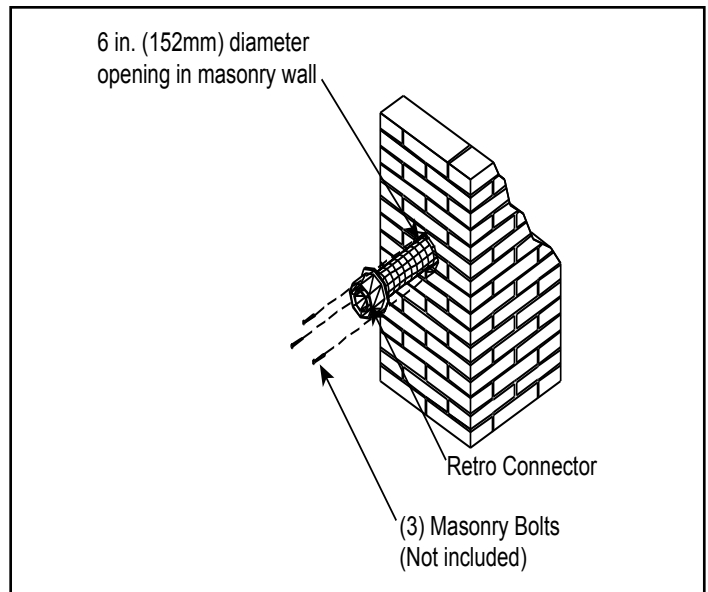
**Figure 4.27**

8. Secure the top adapter to the flashing. Use three sheet metal screws through the side of the top adapter into the flange on the flashing See Figure 4.28. Twist lock the high wind termination cap on to the top adapter.



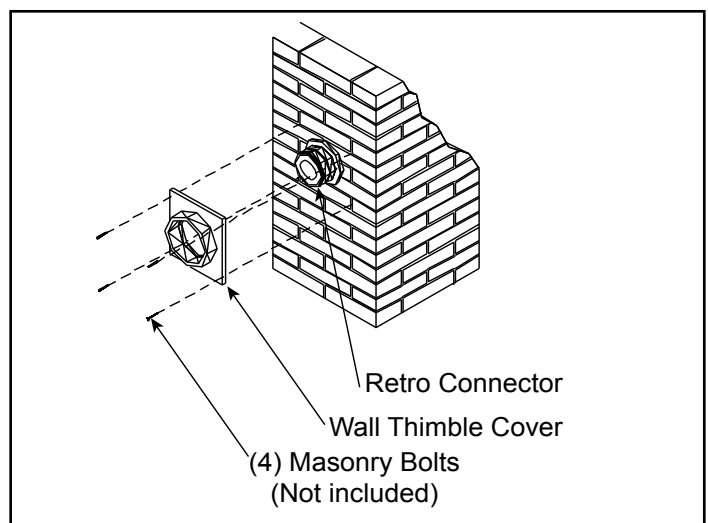
**Figure 4.28**

9. Attach the flex to the retro connector. Use three sheet metal screws to attach the flex liner to the connector. Mount the retro connector to the masonry wall using masonry bolts. See Figure 4.29. Redrill larger holes on connector as needed. Be careful to ensure that the connector is centered in the opening and the mounting holes line up with the masonry wall.



**Figure 4.29**

10. Slide wall thimble cover over retro connector and secure with masonry bolts. See Figure 4.30. If you have a framed wall in front of the masonry, use wood screws to mount wall thimble cover to framed wall, over retro connector and 10 in. (254mm) square framed opening See Figure 4.25. If needed, add a section of direct vent pipe to the retro connector in order to extend through the opening in the wall thimble cover.
11. The connection between the appliance and the retro connector may be completed with sections of direct vent pipe.



**Figure 4.30**

## Coaxial to Colinear Venting

The coaxial to colinear adapter (DV-46DVA-GCL) is approved for installations into solid fuel masonry or factory built fireplaces that have been installed in accordance with the National, Provincial, State and local building codes.

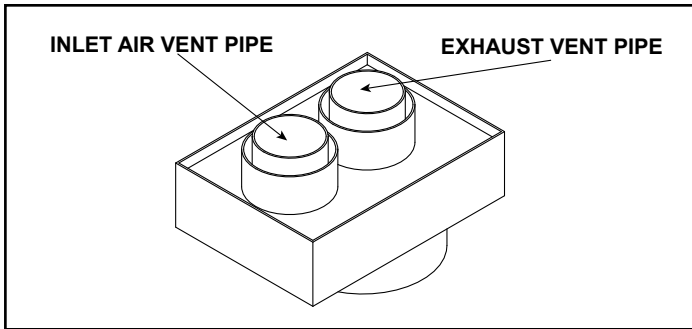


Figure 4.31 Coaxial/Colinear Appliance Connector

**WARNING! Risk of Fire!** Coaxial to colinear venting configuration may only be used in existing non-combustible chimney. Installation in any other venting application could cause fire.

**WARNING! Risk of Fire, Explosion or Asphyxiation!** Do NOT connect this gas appliance to a chimney flue serving a separate solid fuel or gas burning appliance.

- May impair safe operation of this appliance or other appliances connected to the flue.
- Vent this appliance directly outside.
- Use separate vent system for this appliance.

# 5 Vent Clearances and Framing

## A. Pipe Clearances to Combustibles

**WARNING! Risk of Fire! Maintain air space clearance to vent. DO NOT pack insulation or other combustibles:**

- Between ceiling firestops
- Between wall shield firestops
- Around vent system

Failure to keep insulation or other material away from vent pipe may cause overheating and fire.

Note: Heat shields MUST overlap by a minimum of 1-1/2 in. (38 mm).  
 • If wall thickness is less than 4 in. the existing heat shields must be field trimmed. If wall thickness is greater than 7-1/4 in. a DVP-HSM-B will be required.  
 • SLP heat shield - designed to be used on a wall 4-3/8 in. to 7-5/8 in. (111 mm to 194 mm thick).  
 • If wall thickness is less than 4-3/8 the existing heat shields must be field trimmed. If wall thickness is greater than 7-5/8 in. a DVP-HSM-B will be required.

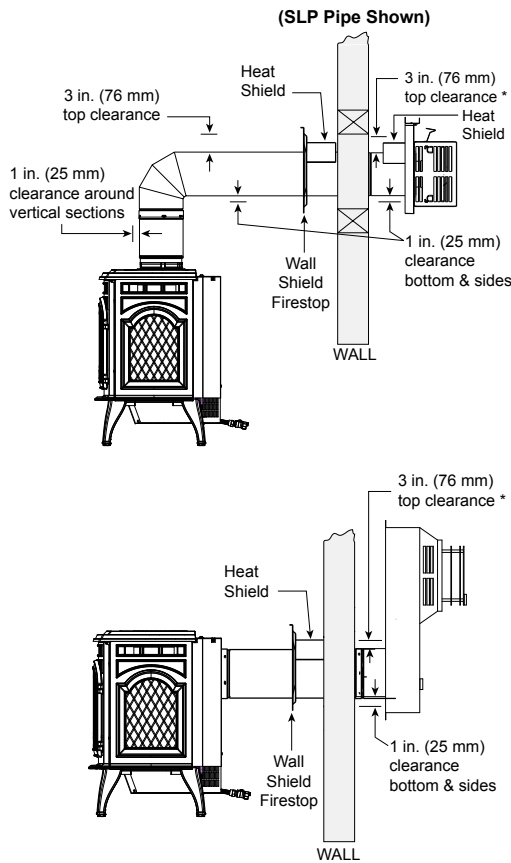


Figure 5.1 Horizontal Venting Clearances To Combustible Materials

## B. Wall Penetration Framing/Firestops

### Combustible Wall Penetration

Whenever a combustible wall is penetrated, you must frame a hole for the wall shield firestop(s). The wall shield firestop maintains minimum clearances and prevents cold air infiltration.

- The opening must be framed on all four sides using the same size framing materials as those used in the wall construction.
- SLP pipe - A wall shield firestop must be placed on each side of an interior wall. A minimum 1-1/2 in. (38 mm) overlap of attached heat shields must be maintained.
- See Section 7.F. for information for regarding the installation of a horizontal termination cap.

### Non-Combustible Wall Penetration

If the hole being penetrated is surrounded by non-combustible materials such as concrete, a hole with diameter one inch greater than the pipe is acceptable.

Whenever a non-combustible wall is penetrated, the wall shield firestop is only required on one side and no heat shield is necessary.

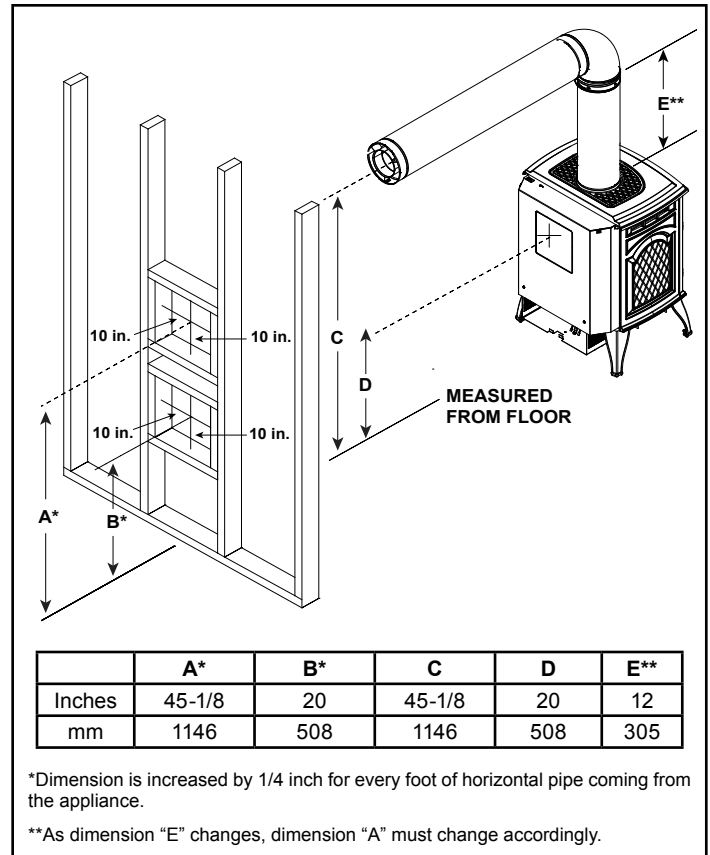


Figure 5.2 Wall Penetration

## C. Ceiling Firestop/Floor Penetration Framing

A ceiling firestop **MUST** be used between floors and attics.

- **SLP Pipe** - Frame opening 9 in. x 9 in. (229 mm x 229 mm) whenever the vent penetrates a ceiling/floor (see Figure 5.3).
- Frame the area with the same sized lumber as used in ceiling/floor joist.
- The ceiling firestop may be installed above or below the ceiling joists when installed with an attic insulation shield. It must be under joists between floors that are not insulated. Refer to Figure 5.4.
- Secure with three fasteners on each side.

**WARNING! Risk of Fire! DO NOT pack insulation around the vent. Insulation must be kept back from the pipe to prevent overheating.**

## D. Install Attic Insulation Shield

**WARNING! Fire Risk. DO NOT allow loose materials or insulation to touch vent. Hearth & Home Technologies requires the use of an attic shield.**

The International Fuel Gas Code requires an attic shield constructed of 26 gauge minimum steel that extends at least 2 in. (51 mm) above insulation.

- Attic insulation shields must meet specified clearances to combustible materials and be secured in place.
- An attic insulation shield kit is available from Hearth & Home Technologies. Contact your dealer to order. Install attic insulation shield according to instructions included with kit.

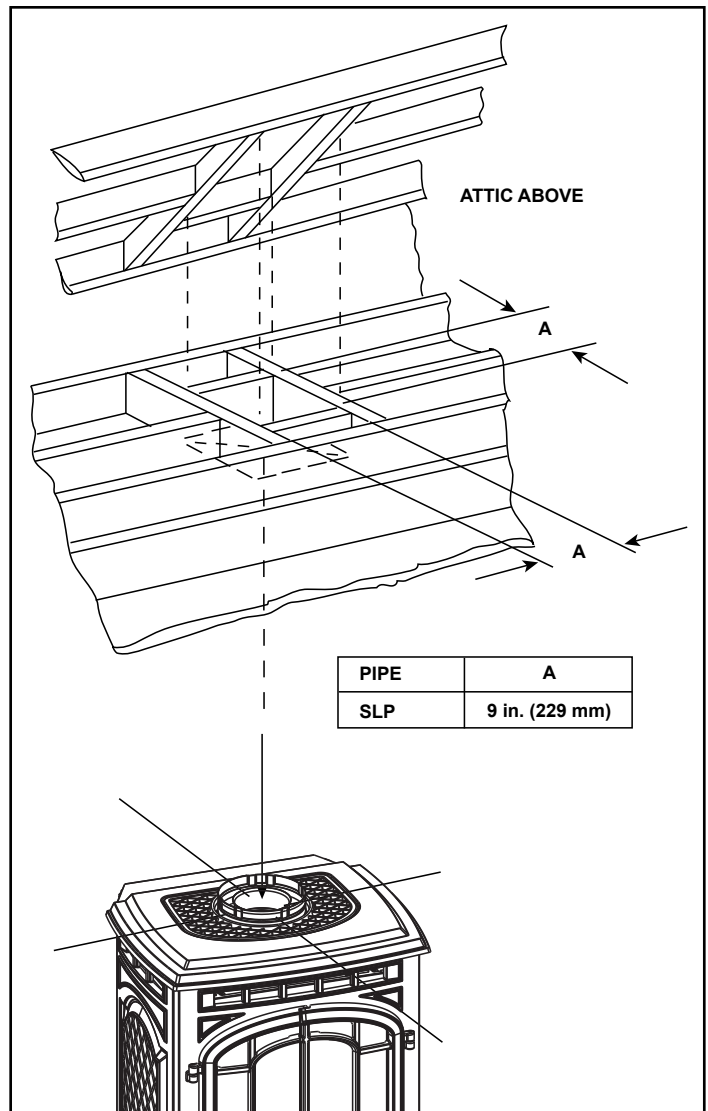


Figure 5.3 Installing Ceiling Firestop

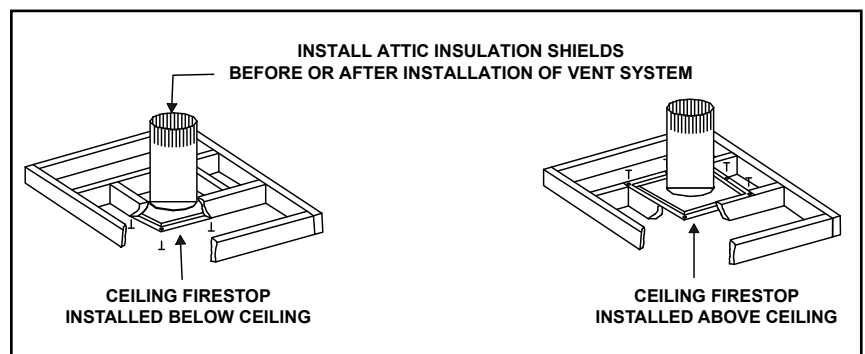


Figure 5.4 Installing the Attic Shield

# 6 Appliance Preparation

## A. Top to Rear Vent Conversion

This model comes from the factory set up for a top vented application. To vent this model from the rear, follow the conversion instructions below. If venting off the top, no further preparation is needed. Proceed to next section.

See Service Parts list in Owner's Manual for Kit information.

**CAUTION! Risk of Cuts, Abrasions or Flying Debris.** Wear protective gloves and safety glasses during installation. Sheet metal edges are sharp.

**Included in Kit:** Rear vent grille, NG Orifice (#46), LP Orifice (#55)

**Tools Required:** Power drill, 1/4 in. hex driver bit, 3/8 in. open end wrench, high temperature sealant (if required)

**Note:** TIARAI-IP1 unit is shown in the photos and drawings in this instruction. Instructions apply to both TIARAI-IP1 and SAPH-IP1 units.

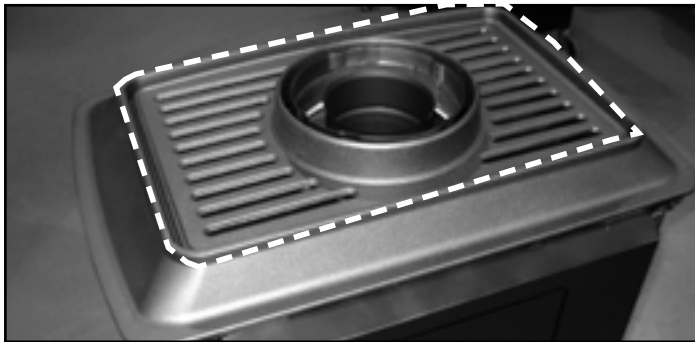


Figure 1

1. Remove top grille, as highlighted.

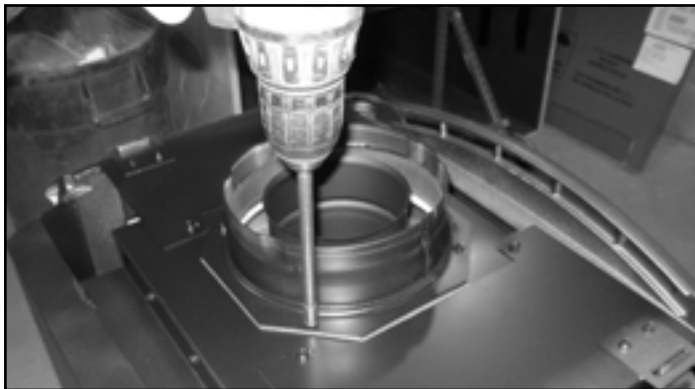


Figure 2

2. Remove vent pipe adapter and gasket by removing 4 screws. Save the screws. (If gasket breaks, apply high-temp sealant to bottom of adapter before installing as shown in Figure 8.) 3. Remove the inner pipe adapter shown in Figure 3 by removing six screws. Remove gasket and discard. Replace six screws into holes and tighten.



Figure 3.



Figure 4

4. Locate the knock out on rear of appliance. Break the seal on the knock out and discard the knock out.

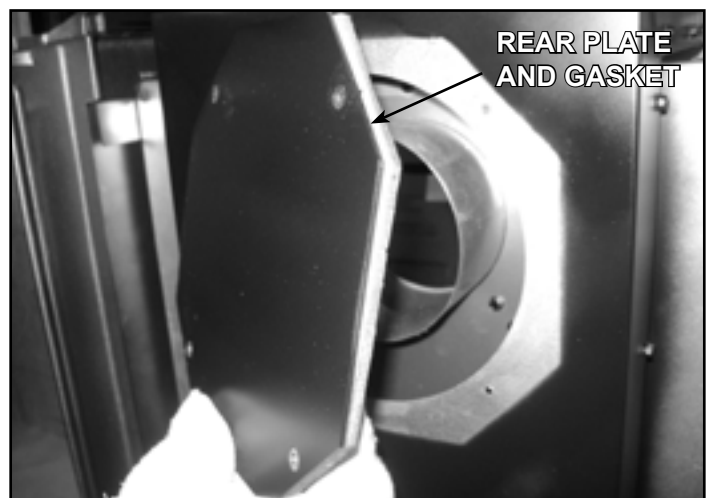


Figure 5



5. Remove rear access plate and gasket by removing four screws. Save the screws. See Figure 5.

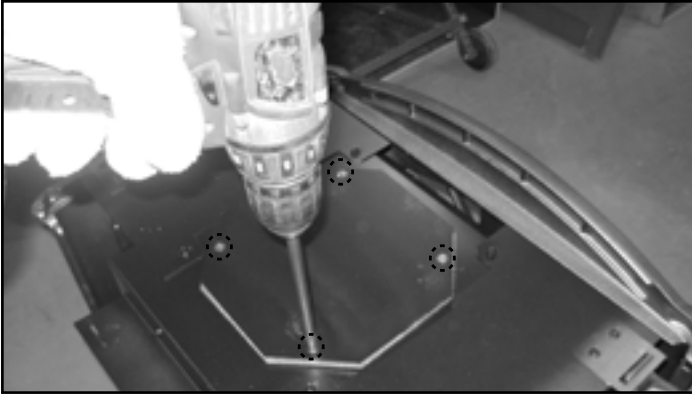


Figure 6. Reattach Rear Access Plate/Gasket

6. Place rear access plate and gasket over top vent and attach with the four screws removed in Figure 2.



Figure 7. Remove Screws Under Rear Access Plate

7. Remove six screws under the rear access plate removed in Figure 5. See Figure 7. Install inner pipe adapter and new gasket (included with kit) using six screws. See Figure 8.

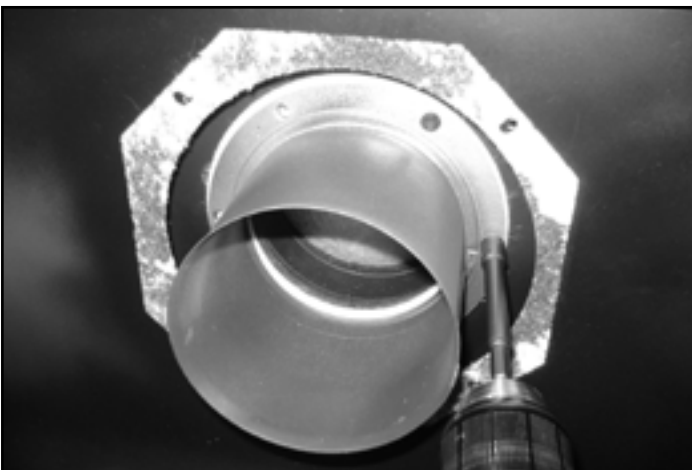


Figure 8. Attach inner collar adapter to rear flue vent.



Figure 9. Reattach Starting Collar/Gasket

8. Install starting collar with gasket or high-temp sealant to rear vent opening. Attach with screws removed in Figure 5. Place grille gently into the opening on top of appliance. The grille does not have a hole and is included with the kit.

**Note:** The TIARAI-IPI is shown in Figures 9-13. The SAPPHIRE-IPI is assembled in a similar manner.

9. Remove front casting. See Figure 11.
10. Release the glass latches on the lower corners of the appliance and remove the glass assembly. See Figure 12.
11. Remove the logs and side refractory if installed. To remove side refractory, bend tab at top front corner of refractory. See Figure 13.
12. Remove upper baffle by removing two screws as shown in Figure 10.
13. The pilot needs to be lifted slightly to accommodate the burner removal. Remove the two screws that attach the pilot to the burner. Lift the pilot slightly until it clears the pilot mounting tabs. See Figure 13.
14. Remove two burner mounting screws from each side of the burner. Lift burner up and out of appliance. See Figure 13.

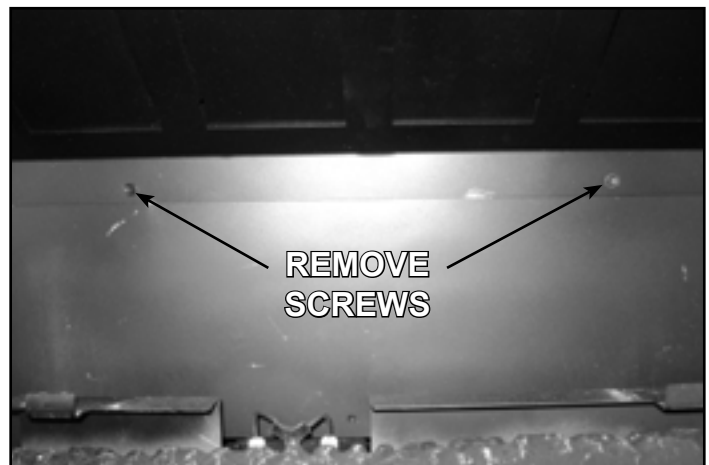


Figure 10. Remove Upper Baffle

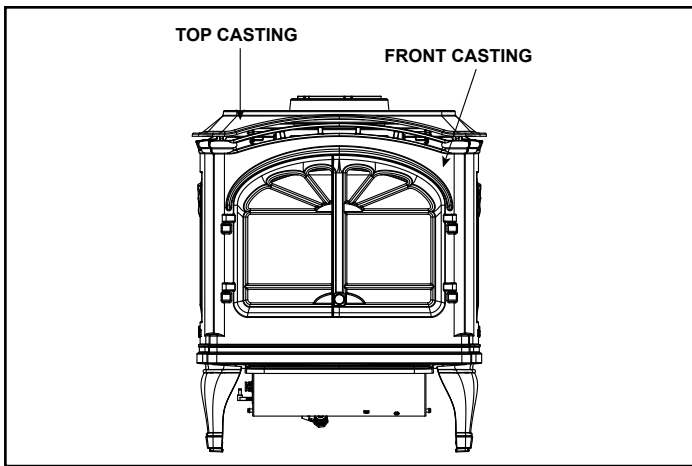


Figure 11. Remove Casting

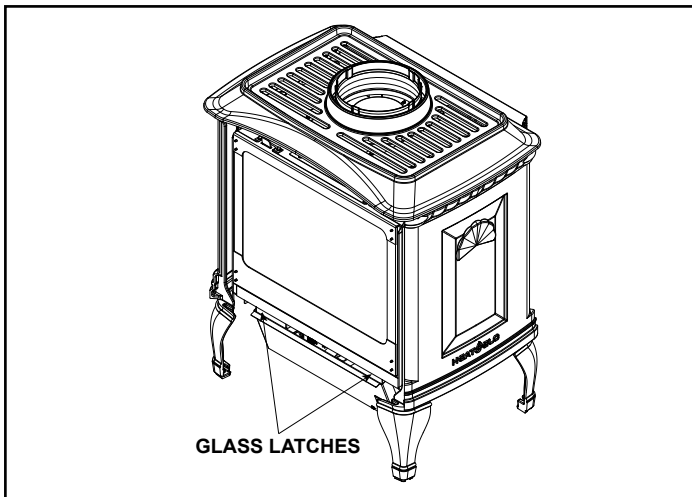


Figure 12. Remove Glass Frame

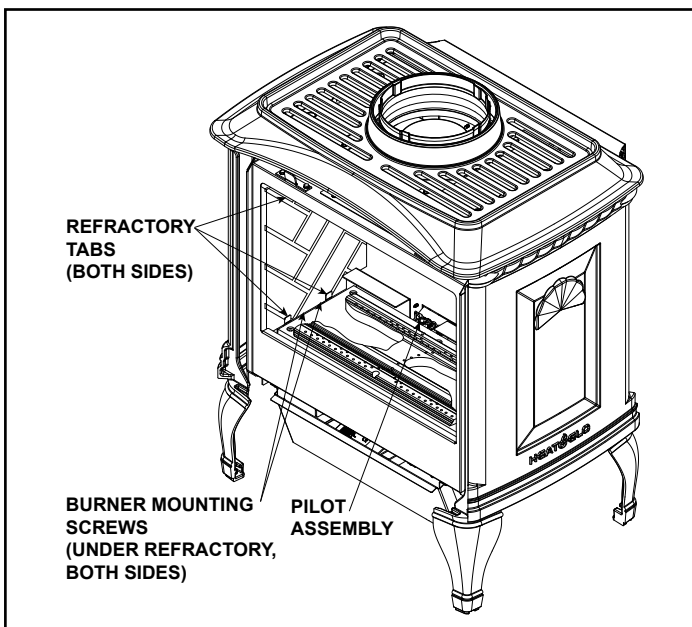


Figure 13. Remove Burner

15. Using the 3/8 in. open end wrench, replace the main burner orifice with the orifice included in the conversion kit. Use appropriate orifice for gas type. See Figure 14.

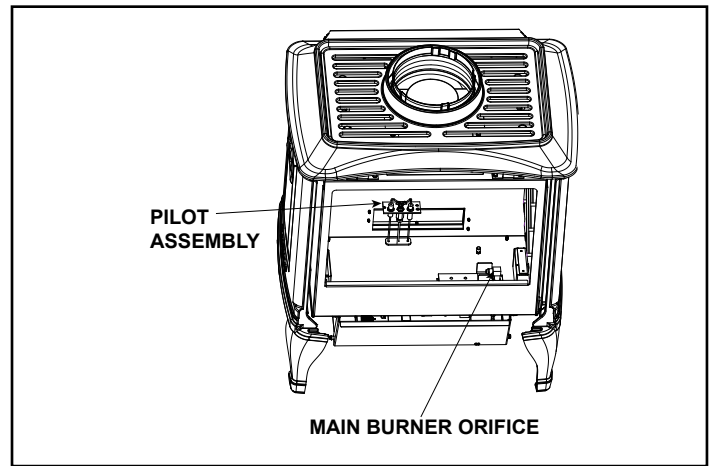


Figure 14.

16. Reinstall burner with four screws.
17. On inside of firebox, remove plate and gasket on rear of firebox by removing three screws as shown in Figure 14. Discard gasket. Replace screws on rear of firebox. Remove three screws as shown in Figure 15. Attach plate and new gasket, included in kit, with three screws.
18. Reinstall upper baffle. Ensure the upper portion of the baffle rests on top of the refractory tabs.

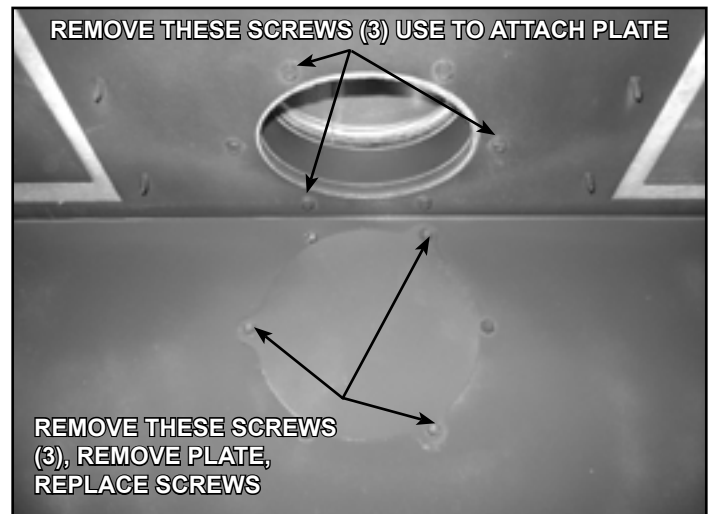


Figure 15.

19. Reinstall the pilot to the burner.

### **WARNING**



#### Explosion Risk

- Pilot must be reattached to burner.
- Delayed ignition or an explosion may occur if the pilot is not attached to the burner shield

20. Reinstall side refractory, if applicable. Reinstall logs.
21. Reinstall the glass frame. Secure the glass frame into position with the latches located on the bottom sides of the firebox.
22. Reinstall front casting.

2342-925C

## B. Securing and Leveling the Appliance

**WARNING! Risk of Fire!** Prevent contact with combustible materials.

**WARNING! Risk of Fire!** Failure to maintain air space clearance may cause overheating and fire.

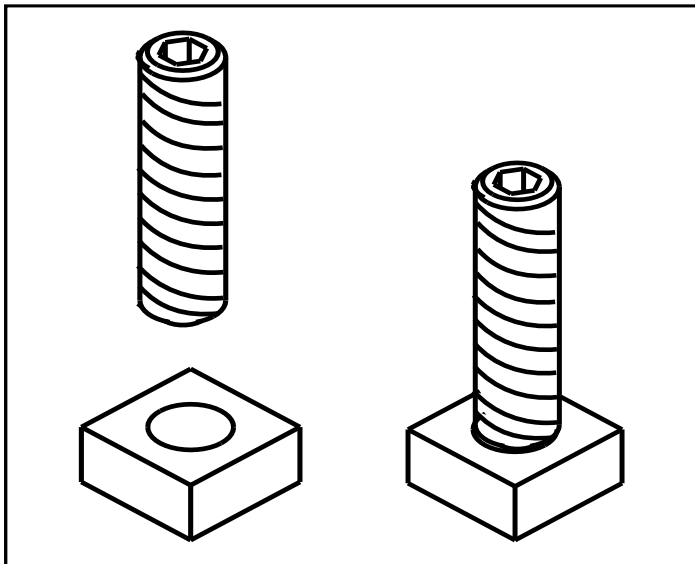


Figure 8.10

1. Thread Allen bolts through nuts until flush.

**NOTE:** Two Allen bolts and two nuts are included in the component bag. Normally, only one is required on the leg not touching the floor.

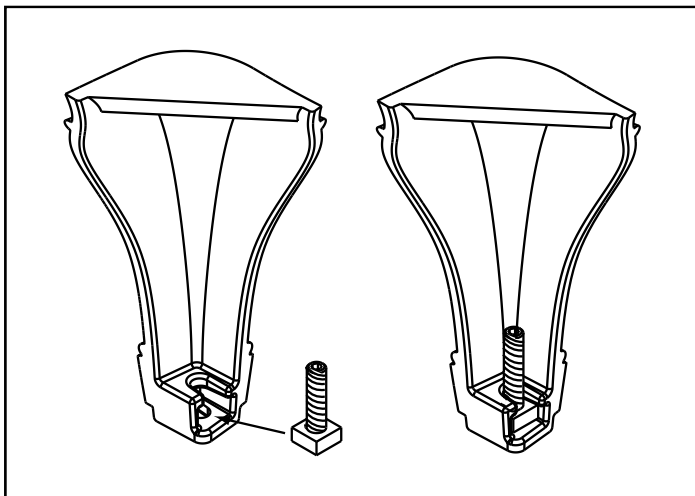


Figure 8.11

2. Slide assembled nuts and bolts into slots on legs with the nuts on the bottom.

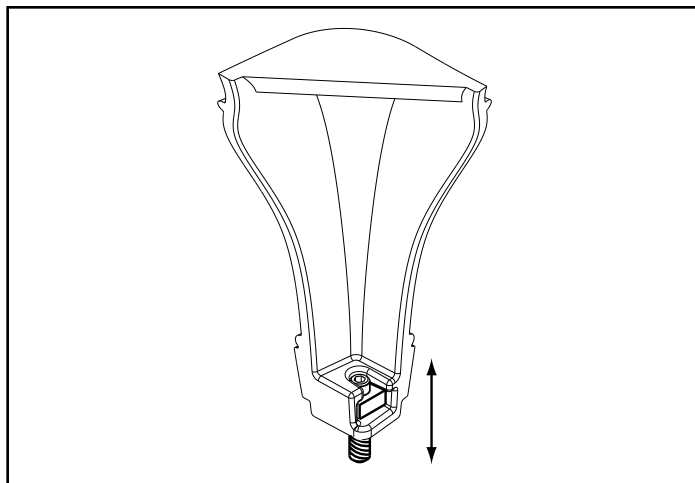


Figure 8.12

3. Use a 5/32 in. (4mm) Allen wrench to adjust legs up and down to desired level.

# 7 Venting and Chimneys

## A. Assemble Vent Sections

To attach the first vent component to the starting collars of the appliance:

- Lock the vent components into place by sliding the pipe section onto the collar.
- Align the seam of the pipe and seam of collar to allow engagement. Rotate the vent component to lock into place. Use this procedure for all vent components. See Figure 7.2.
- Slide the gasket over the first vent section and place it flush to the appliance. This will prevent cold air infiltration. Caulk with a minimum of 300°F continuous exposure rating may be used to hold the part in place.
- Continue adding vent components, locking each succeeding component into place.
- Ensure that each succeeding vent component is securely fitted and locked into the preceding component.

### Required Commercial, Multi-family (Multi-level exceeding two stories), or High-Rise Applications

For Installation into a commercial, multi-family (multi-level exceeding two stories) or high-rise applications: All outer pipe joints must be sealed with high temperature silicone (300° F minimum continuous exposure rating), including the slip section that connects directly to the horizontal termination cap.

- Apply a bead of silicone sealant (300° F minimum continuous exposure rating) inside the female outer pipe joint prior to joining sections. See Figure 7.1.
- Only outer pipes need to be sealed. All unit collar, pipe, slip section, elbow and cap outer flues shall be sealed in this manner, unless otherwise stated.

**WARNING! Risk of Fire or Explosion! DO NOT break silicone seals on slip sections. Use care when removing termination cap from slip pipe. If slip section seals are broken during removal of the termination cap, vent may leak.**



Figure 7.1 High Temperature Silicone Sealant

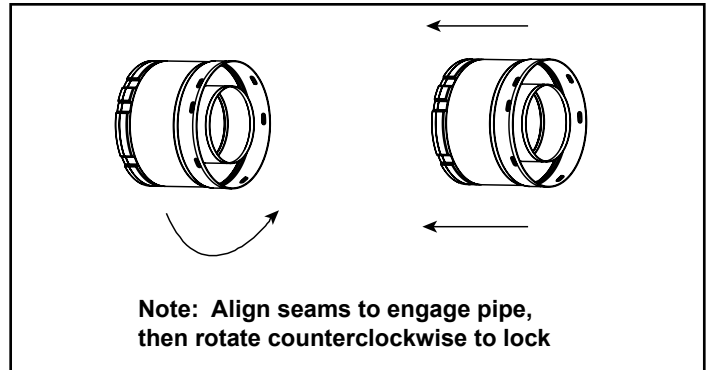


Figure 7.2 Adding Venting Components

## B. Assemble Slip Sections

- Slide the inner flue of the slip section into the inner flue of the pipe section and the outer flue of the slip section over the outer flue of the pipe section. See Figure 7.3.
- Slide together to the desired length.



Figure 7.3 Slip Section Pilot Holes

- Maintain a 1-1/2 in. (38 mm) overlap between the slip section and the pipe section.
- Secure the pipe and slip section with two screws no longer than 1/2 in. (13 mm), using the pilot holes in the slip section. See Figure 7.4.



Figure 7.4 Screws into Slip Section

- Continue adding pipe as necessary following instructions in “Assembling Pipe Sections.”

**NOTICE:** *If slip section is too long, the inner and outer flues of the slip section can be cut to the desired length.*

- *Apply a bead of silicone sealant (300° F minimum continuous exposure rating) inside the female outer pipe joint prior to joining sections.*
- *Only outer pipes are sealed, sealing the inner flue is not required.*
- *All unit collar, pipe, slip section, elbow and cap outer flues shall be sealed.*

### C. Secure the Vent Sections

- Vertical runs originating off the top of the appliance, with no offsets, must be supported every 8 ft. (2.44 m) after the maximum allowed 25 ft. (7.62 m) of unsupported rise.
- Vertical runs originating off the rear of the appliance, or after any elbow, must be supported every 8 ft. (2.44 m).
- Horizontal runs must be supported every 5 feet (1.52 m).
- Vent supports or plumbers strap (spaced 120° apart) may be used to support vent sections. See Figures 7.5 and 7.6.
- Wall shield firestops may be used to provide horizontal support to vent sections.
- SLP ceiling firestops have tabs that may be used to provide vertical support.

**WARNING! Risk of Fire, Explosion or Asphyxiation!** Improper support may allow vent to sag and separate. Use vent run supports and connect vent sections per installation instructions. **DO NOT** allow vent to sag below connection point to appliance.

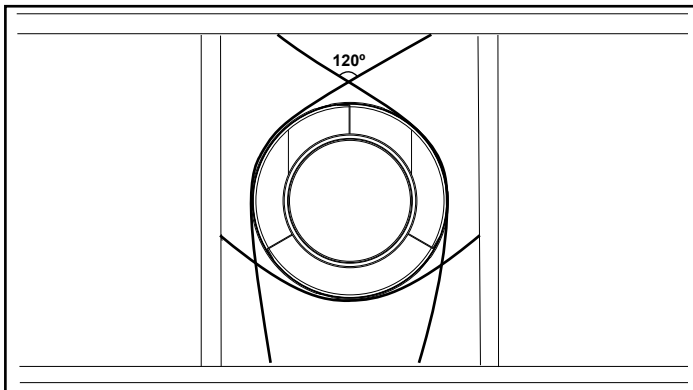


Figure 7.5 Securing Vertical Pipe Sections

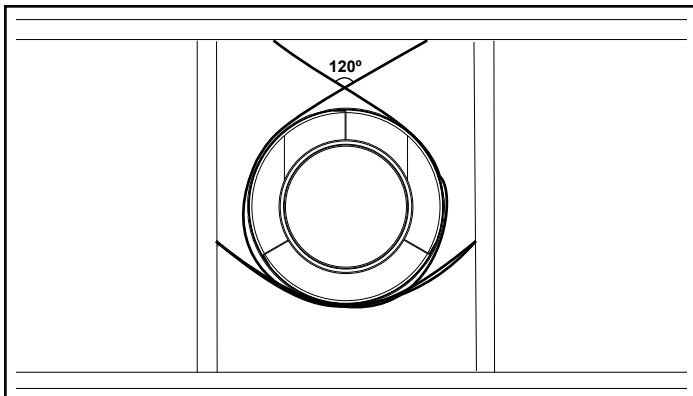


Figure 7.6 Securing Horizontal Pipe Sections

### D. Disassemble Vent Sections

- Rotate either section (see Figure 7.7) so the seams on both pipe sections are aligned as shown in Figure 7.8.
- Pull carefully to separate the pieces of pipe.

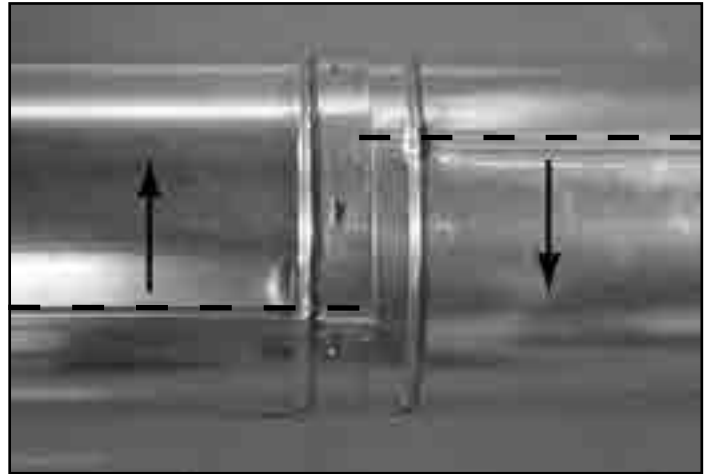


Figure 7.7 Rotate Seams for Disassembly

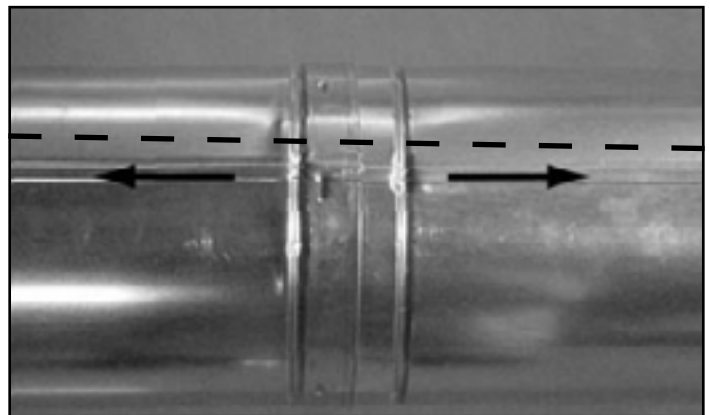


Figure 7.8 Align and Disassemble Vent Sections

## Install Decorative Ceiling Components

A decorative ceiling thimble can be installed on a flat ceiling through which the vent passes. The decorative ceiling thimble is used to cover the firestop.

- Seal the gap between the vent pipe and firestop using high temperature silicone (300° F minimum continuous exposure rating) to prevent cold air infiltration.
- Install the decorative ceiling thimble by sliding it up to the ceiling and attaching it using the provided screws.

A decorative cathedral ceiling support box can be installed on a cathedral ceiling through which the vent passes.

- Use a plumb-bob to mark the center line of the venting system on the ceiling and drill a small hole through the ceiling and roof at this point. Locate the hole and mark the outline of the cathedral ceiling support box on the outside roof.
- Remove shingles or other roof covering as necessary to cut the rectangular hole for the support box. Cut the hole 1/8 in. (3 mm) larger than the support box outline.
- Lower the support box through the hole in the roof until its bottom is at least 2 in. (51 mm) below the ceiling (Figure 7.9).
- Level the support box both vertically and horizontally and temporarily tack it in place through the inside walls into the roof sheathing.
- Use tin snips to cut the support box from the top corners down to the roof line and fold the resulting flaps to the roof. See Figure 7.10.
- Nail the flaps to the roof AFTER running a bead of non hardening sealant between the flaps and the roof.

**WARNING! Risk of Fire!** Clean out ALL materials from inside the support box and complete the vertical vent run and termination.

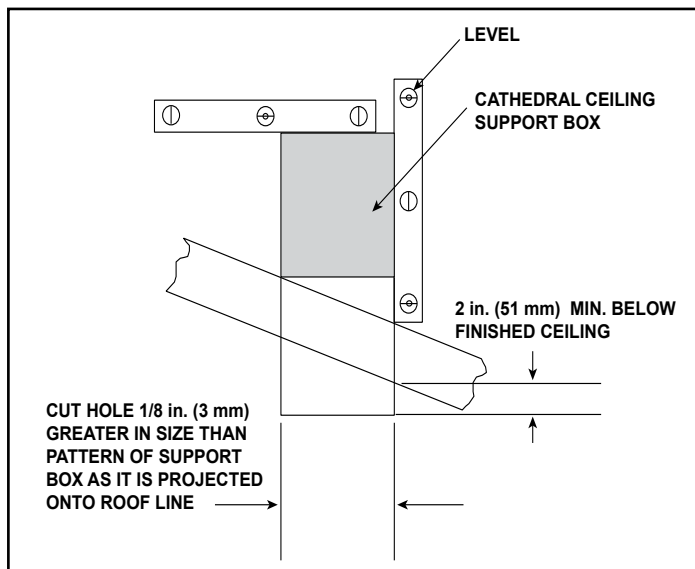


Figure 7.9

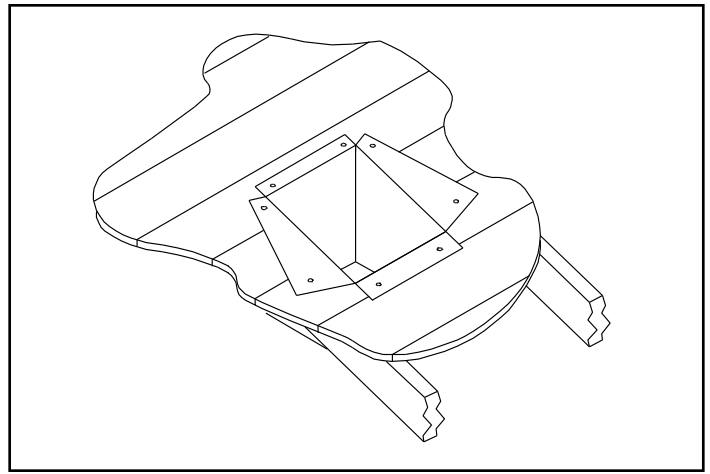


Figure 7.10



## E. Vertical Termination Requirements

### Install Metal Roof Flashing

- See minimum vent heights for various pitched roofs (Figure 7.11) to determine the length of pipe to extend through the roof.
- Slide the roof flashing over the pipe sections extending through the roof as shown in Figure 7.12.

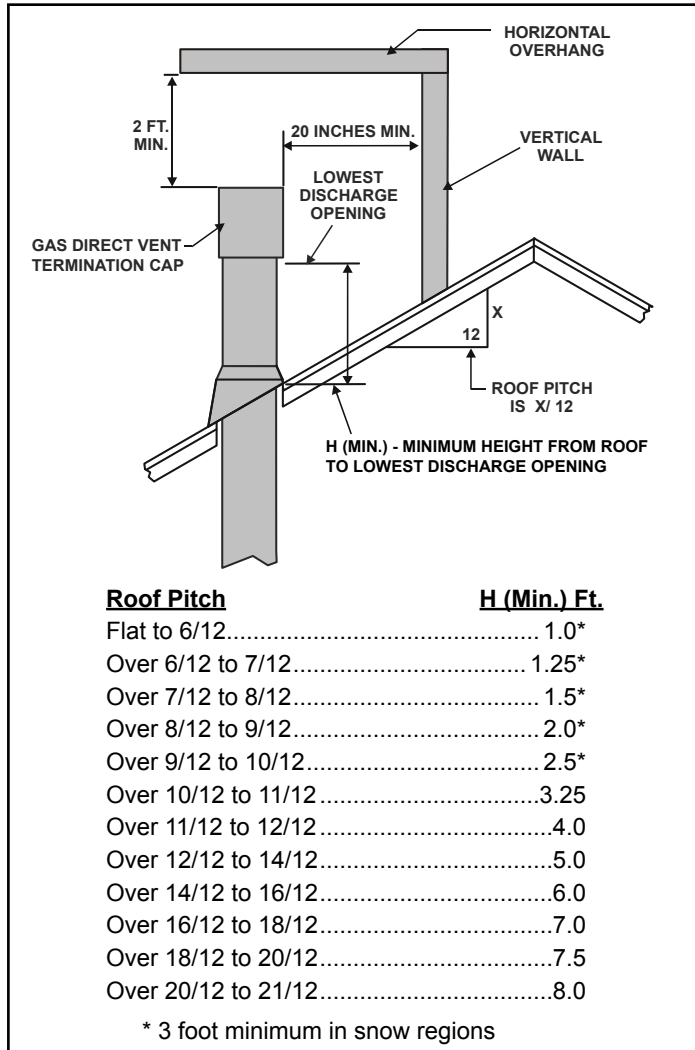


Figure 7.11 Minimum Height From Roof To Lowest Discharge Opening

**NOTICE:** Failure to properly caulk the roof flashing and pipe seams may permit entry of water.

- Caulk the gap between the roof flashing and the outside diameter of the pipe.
- Caulk the perimeter of the flashing where it contacts the roof surface. See Figure 7.15.
- Caulk the overlap seam of any exposed pipe sections that are located above the roof line.

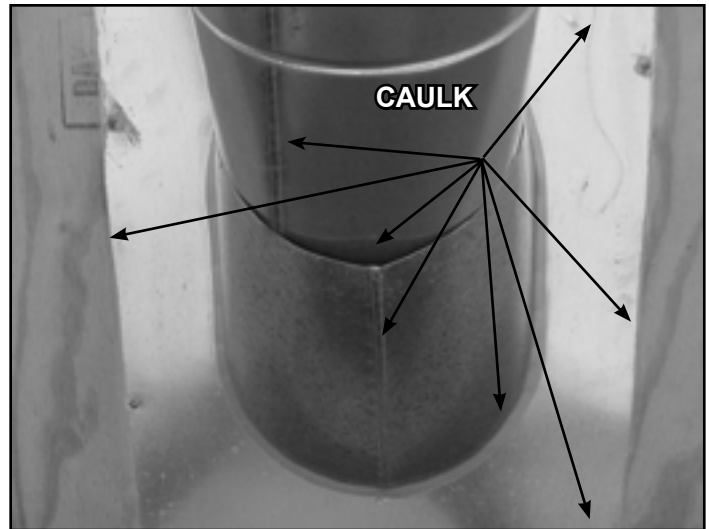


Figure 7.12

- Any occupied areas above the first floor, including closets and storage spaces, which the vertical vent passes through must be enclosed. See Figure 7.13 for required clearances between vent and enclosure.

**WARNING! Risk of Fire!** Maintain air space clearance to vent. **DO NOT** pack insulation or other combustibles around vent system. Failure to keep insulation or other material away from vent pipe may cause overheating and fire.

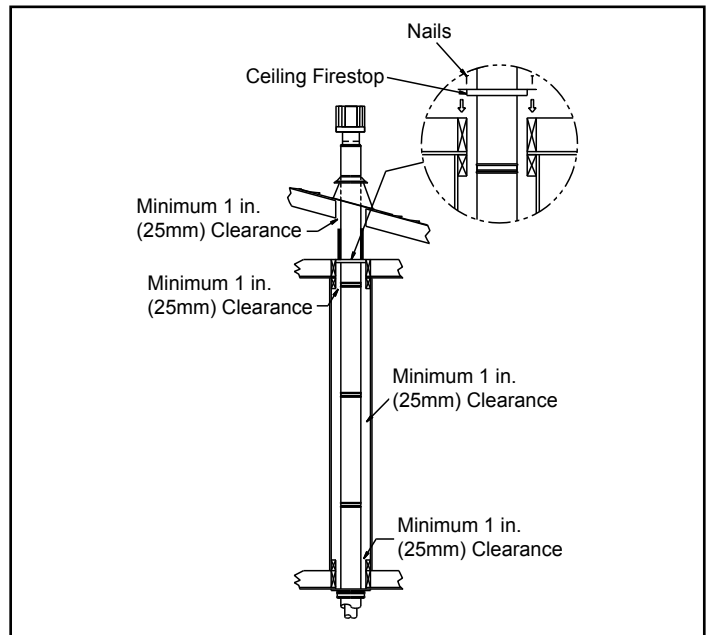


Figure 7.13



## Assemble and Install Storm Collar

**CAUTION! Risk of Cuts, Abrasions or Flying Debris.** Wear protective gloves and safety glasses during installation. Sheet metal edges are sharp.

- Slide the storm collar onto the exposed pipe section and align brackets.
- Insert a bolt (provided) through the brackets and install nut. Do not completely tighten.



Figure 7.14 insert Bolt into Brackets

- Slide the assembled storm collar down the pipe section until it rests on the roof flashing (see Figure 7.14).
- Tighten nut and make sure the collar is tight against the pipe section.
- Caulk around the top of the storm collar. See Figure 7.15.

## Install Vertical Termination Cap

- Attach the vertical termination cap by sliding the inner collar of the cap into the inner flue of the pipe section while placing the outer collar of the cap over the outer flue of the pipe section.
- Secure the cap by driving three self-tapping screws (supplied) through the pilot holes in the outer collar of the cap into the outer flue of the pipe (see Figure 7.15).



Figure 7.15

## F. Horizontal Termination Requirements Install Decorative Wall Components (SLP only)

A decorative wall thimble can be installed on wall through which the vent passes. The decorative wall thimble is used to cover the wall shield firestop.

- Slide the decorative wall thimble over the last section of horizontal pipe before connecting the termination cap to the pipe.
- Once the pipe section and the termination cap have been connected, slide the wall thimble up to the interior wall surface and attach with screws provided. See Figure 7.17.

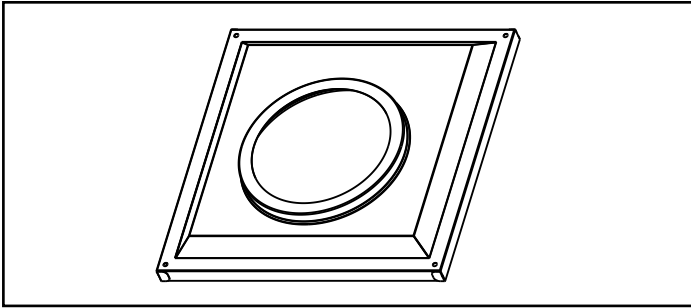


Figure 7.17 Wall Thimble

## Heat Shield Requirements for Horizontal Termination

**WARNING! Risk of Fire!** To prevent overheating and fire, heat shields must extend through the entire wall thickness.

- **DO NOT** remove the heat shields attached to the wall shield firestop and the horizontal termination cap (shown in Figure 7.18).
- Heat shields must overlap 1-1/2 in. (38 mm) minimum.

There are two sections of the heat shield. One section is factory-attached to the wall shield firestop. The other section is factory-attached to the cap. See Figure 7.18.

If the wall thickness does not allow the required 1-1/2 in. (38 mm) heat shield overlap when installed, an extended heat shield must be used.

- If the wall thickness is less than 4-3/8 in./ 111 mm, the heat shields on the cap and wall shield firestop must be trimmed. A minimum 1-1/2 in. (38 mm) overlap **MUST** be maintained.
- Use an extended heat shield if the finished wall thickness is greater than 7-1/4 in. (184 mm).
- The extended heat shield may need to be cut to length maintaining sufficient length for a 1-1/2 in. (38 mm) overlap between heat shields.
- Attach the extended heat shield to either of the existing heat shields using the screws supplied with the extended heat shield. Refer to vent components diagrams in the back of this manual.
- Rest the small leg on the extended heat shield on top of the pipe section to properly space it from the pipe section.

**Important Notice:** Heat shields may not be field constructed.

## Install Horizontal Termination Cap

**WARNING! Risk of Fire!** The telescoping flue section of the termination cap **MUST** be used when connecting vent.

- 1-1/2 (38 mm) minimum overlap of flue telescoping section is required. Failure to maintain overlap may cause overheating and fire.
- Vent termination must not be recessed in the wall. Siding may be brought to the edge of the cap base.
- Flash and seal as appropriate for siding material at outside edges of cap.
- When installing a horizontal termination cap, follow the cap location guidelines as prescribed by current **ANSI Z223.1** and **CAN/CGA-B149** installation codes and refer to Section 6 of this manual.

**CAUTION! Risk of Burns!** Local codes may require installation of a cap shield to prevent anything or anyone from touching the hot cap.

**NOTICE:** For certain exposures which require superior resistance to wind-driven rain penetration, a flashing kit and HRC caps are available. When penetrating a brick wall, a brick extension kit is available for framing the brick.

**Note:** When using termination caps with factory-supplied heat shield attached, no additional wall shield firestop is required on the exterior side of a combustible wall.

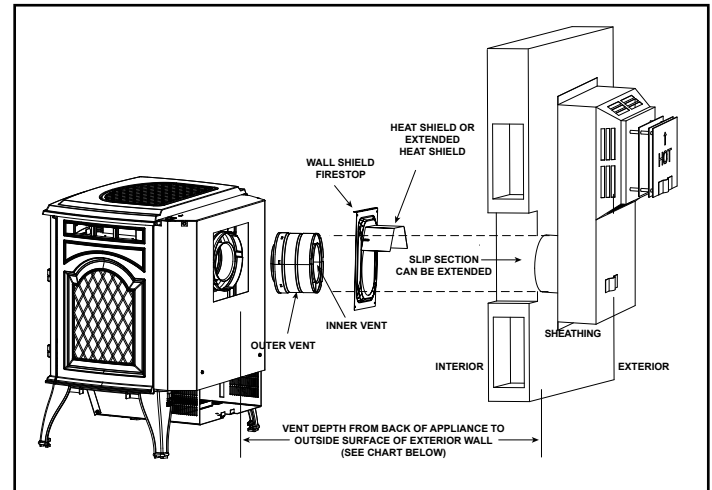


Figure 7.18 Venting through the wall

# 8 Electrical Information

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## A. General Information

**WARNING! Risk of Shock or Explosion! DO NOT** wire 110-120 VAC to the valve or to the appliance wall switch. Incorrect wiring will damage controls.

**NOTICE:** This appliance must be electrically wired and grounded in accordance with local codes or, in the absence of local codes, with **National Electric Code ANSI/NFPA 70-latest edition** or the **Canadian Electric Code CSA C22.1**.

- Plug the cord from the appliance junction box to unswitched 110-120 VAC. This is required for proper operation of the appliance.
- A 110-120 VAC circuit for this product must be protected with ground-fault circuit-interrupter protection, in compliance with the applicable electrical codes, when it is installed in locations such as in bathrooms or near sinks.
- Low voltage and 110-120 VAC voltage cannot be shared within the same wall box.

**WARNING! Risk of Shock! Plug 3-pronged (grounding) plug directly into a properly grounded 3-pronged receptacle. DO NOT cut or remove grounding prong from plug.**

## Accessories Requirements

- This appliance may be used with a wall switch, wall mounted thermostat and/or a remote control.

Wiring for optional Hearth & Home Technologies approved accessories should be done now to avoid reconstruction. Follow instructions that come with those accessories.

## Electrical Service and Repair

**WARNING! Risk of Shock! Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.**

**WARNING! Risk of Shock! Replace damaged wire with type 105° C rated wire. Wire must have high temperature insulation.**

## B. Wiring Requirements

### IntelliFire™ Plus Ignition System Wiring

- Plug the cord from the appliance junction box to 110-120 VAC for proper operation of the appliance.

**WARNING! Risk of Shock or Explosion! DO NOT** wire IPI controlled appliance junction box to a switched circuit. Incorrect wiring will override IPI safety lockout.

- Refer to Figure 8.1, IPI Wiring Diagram.
- This appliance is equipped with an IntelliFire™ Plus control valve which operates on a 6 volt/1.5 AMP system.
- Plug the 6 volt transformer plug into the appliance junction box to supply power to the unit OR install 4 AA cell batteries (not included) into the battery pack before use.

**NOTICE:** Batteries should only be used as a power source in the event of an emergency power outage. Batteries should not be used as a primary long-term power source. Battery polarity must be correct when installing batteries.

Do not store batteries in the battery pack when the appliance is powered by the 6 volt transformer connected to permanent electrical service.

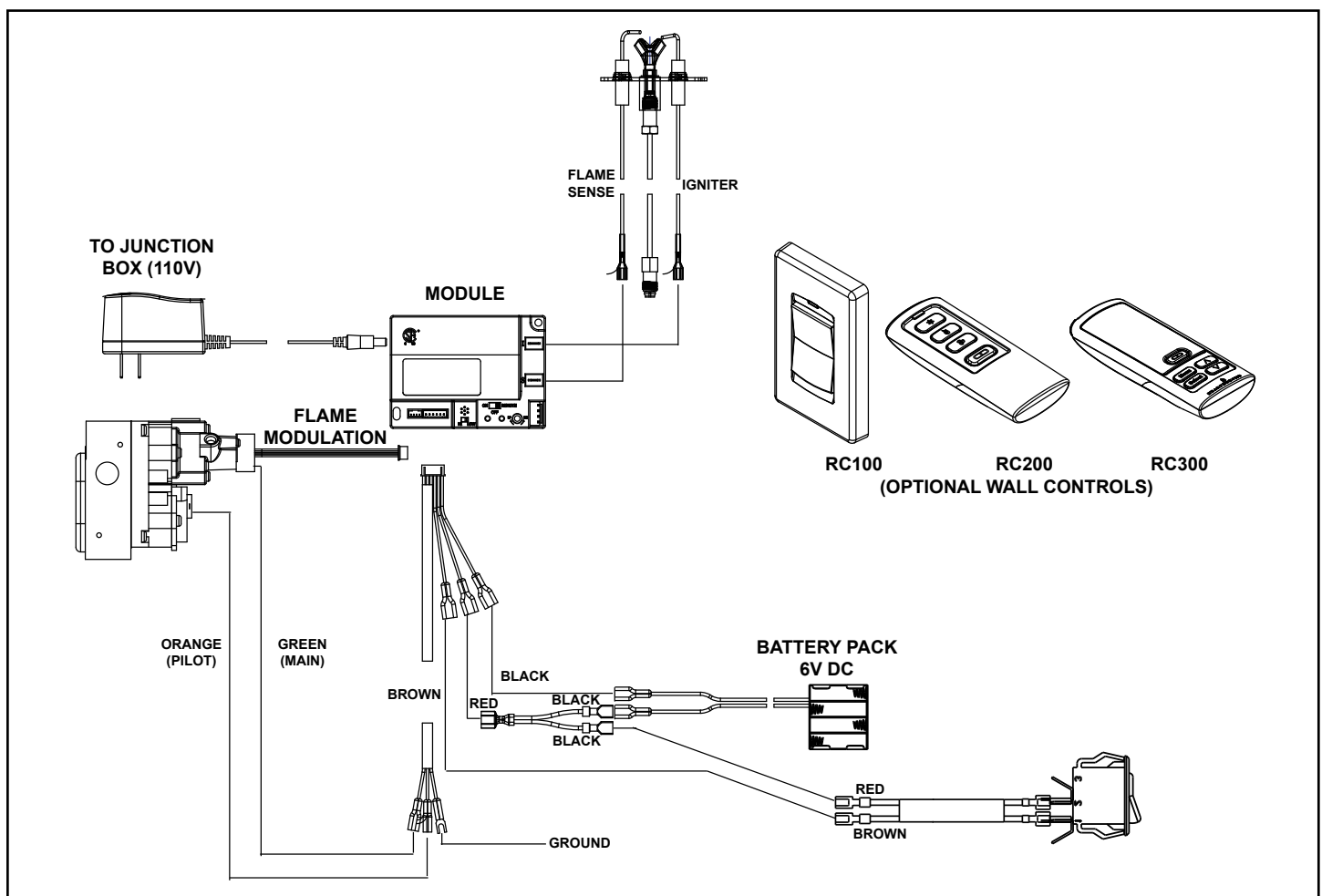


Figure 8.1 IPI Wiring Diagram

## Wall Switch Installation for Fan (Optional)

If the box is being wired to a wall mounted switch for use with a fan (See Figure 8.2):

- The power supply for the appliance must be brought into a switch box.
- The power can then be supplied from the switch box to the appliance using a minimum of 14-3 with ground wire.
- At the switch box connect the black (hot) wire and red (switch leg) wire to the wall switch as shown.
- At the appliance connect the black (hot), white (neutral) and green (ground) wires to the junction box as shown.
- Add a 1/4 in. insulated female connector to the red (switch leg) wire, route it through the knockout in the face of the junction box, and connect to the top fan switch connector (1/4 in. male) as shown.

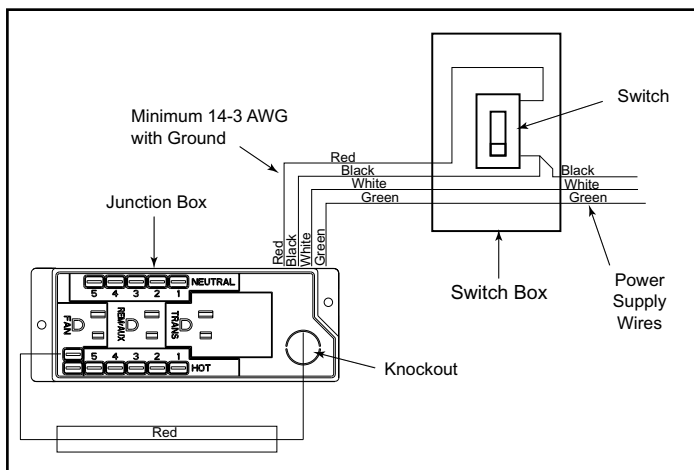


Figure 8.2 Junction Box Wired to Wall Switch or BC10

## Optional Fan Installation

The GFK-160A fan has been designed to circulate room air through the appliance to enhance heat output.

The GFK-160A system operates on 120 VAC, 60 Hz power. This is available through a receptacle in the factory installed junction box on the underside of the appliance.

Compare CONTENTS OF CARTON with the actual parts received. If any parts are missing or damaged, contact your dealer before starting installation.

**WARNING! Risk of Fire! Damaged parts could impair safe operation. DO NOT install damaged components.**

The fan shall be installed by a qualified installer in accordance with the installation instructions included with the fan kit.

Use the instructions below in regards to location of the fan on the stove. For all other information, refer to instructions included with the fan kit.

1. From the rear of the appliance, slide the fan into the fan housing with the magnetic strips down, staggering the gas line. The fan cord should be toward the inside of the appliance. Bend tabs upward approximately 45 degrees. See Figure 8.3.

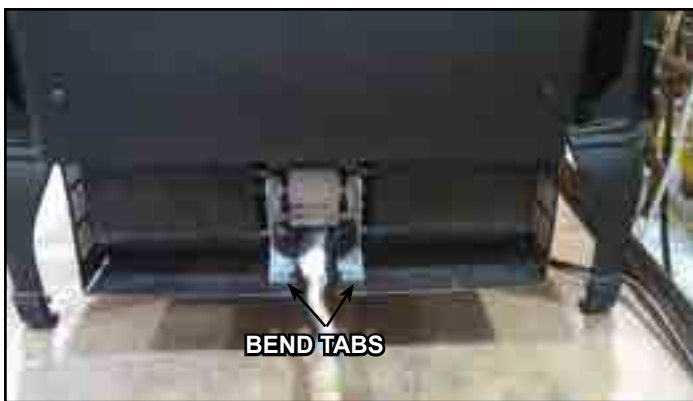


Figure 8.3 Fan Housing

2. From the front of the appliance, plug the blower cord into the junction box receptacle labeled "FAN." Wrap the extra cord inside the controls area in a manner so that it does not contact the bottom of the firebox.
3. Slide temperature sensor switch/bracket assembly onto the 10-32 screw located on the underside of the appliance. Secure the bracket assembly with the wing nut provided. See Figure 8.4.

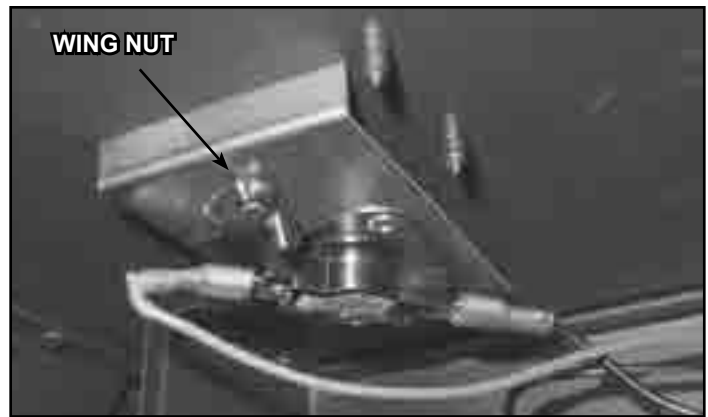


Figure 8.4 Temperature Sensor Switch Installed

4. Remove the knob and locknut from the speed control. Install speed control onto rear shroud with stem protruding from pre-punched hole. Attach the lock nut tightly and reattach the knob on the stem. See Figure 8.5.



Figure 8.5 Pre-Punched Holes for Speed Control

Follow "Power Strip Style Junction Box" wiring diagram section of GFK-160A installation instructions for wiring of the fan.

Follow those instructions for all other information including operation, maintenance and service parts.

# 9 Gas Information

## A. Fuel Conversion

- Make sure the appliance is compatible with available gas types.
- Conversions must be made by a qualified service technician using Hearth & Home Technologies specified and approved parts.


## B. Gas Pressure


- Optimum appliance performance requires proper input pressures.
- Gas line sizing requirements will be determined in ANSI Z223.1 National Fuel Gas Code in the USA and CAN/CGA B149 in Canada.
- Pressure requirements are:

Gas Pressure	Natural Gas	Propane
Minimum inlet pressure	5.0 in. w.c.	11.0 in. w.c.
Maximum inlet pressure	10.0 in. w.c.	13.0 in. w.c.
Manifold pressure	3.5 in. w.c.	10.0 in. w.c.


**WARNING! Risk of Fire or Explosion!** High pressure will damage valve. Low pressure may cause explosion.

- Verify inlet pressures. Verify minimum pressures when other household gas appliances are operating.
- Install regulator upstream of valve if line pressure is greater than 1/2 psig.

**WARNING**



Fire Risk.  
Explosion Hazard.  
High pressure will damage valve.



- Disconnect gas supply piping BEFORE pressure testing gas line at test pressures above 1/2 psig.
- Close the manual shutoff valve BEFORE pressure testing gas line at test pressures equal to or less than 1/2 psig.

**Note:** Have the gas supply line installed in accordance with local codes, if any. If not, follow ANSI 223.1. Installation should be done by a qualified installer approved and/or licensed as required by the locality. (In the Commonwealth of Massachusetts installation must be performed by a licensed plumber or gas fitter).

**Note:** A listed (and Commonwealth of Massachusetts approved) 1/2 in. (13 mm) T-handle manual shut-off valve and flexible gas connector are connected to the 1/2 in. (13 mm) control valve inlet.

- **If substituting for these components, please consult local codes for compliance.**

## C. Gas Connection

- Refer to Reference Section 3 for location of gas line access in appliance.
- Ensure that gas line does not come in contact with outer wrap of the appliance. Follow local codes.
- Connect incoming gas line to the 1/2 in. (13 mm) connection on manual shutoff valve.

**WARNING! Risk of Fire or Explosion!** Support control when attaching pipe to prevent bending gas line.

- A small amount of air will be in the gas supply lines.

**WARNING! Risk of Fire or Explosion!** Gas build-up during line purge could ignite.

- Purge should be performed by qualified service technician.
- Ensure adequate ventilation.
- Ensure there are no ignition sources such as sparks or open flames.

Light the appliance. It will take a short time for air to purge from lines. When purging is complete the appliance will light and operate normally.

**WARNING! Risk of Fire, Explosion or Asphyxiation!** Check all fittings and connections with a non-corrosive commercially available leak-check solution. **DO NOT** use open flame. Fittings and connections could have loosened during shipping and handling.

**WARNING! Risk of Fire! DO NOT** change valve settings. This valve has been preset at the factory.

## D. High Altitude Installations

**NOTICE:** If the heating value of the gas has been reduced, these rules do not apply. Check with your local gas utility or authorities having jurisdiction.

When installing above 2000 feet elevation:

- In the USA: Reduce input rate 4% for each 1000 feet above 2000 feet.
- In CANADA: Input ratings are certified without a reduction of input rate for elevations up to 4500 feet (1370 m) above sea level. Please consult provincial and/or local authorities having jurisdiction for installations at elevations above 4500 feet (1370 m).

Check with your local gas utility to determine proper orifice size.



## E. Air Shutter Setting

Air shutter settings should be adjusted by a qualified service technician at the time of installation. The air shutter is set fully open at the factory for minimum vertical vent run. Adjust air shutter for longer vertical runs. See Figure 9.1.

- Loosen the wing nuts.
- Slide the wing nut to the right to close the air shutter.
- Slide the wing nut to the left to open the air shutter.
- Tighten the wing nuts.

**NOTICE:** *If sooting occurs, provide more air by opening the air shutter.*



Figure 9.1 Air Shutter

# 10 Appliance Setup

## A. Remove Fixed Glass Assembly

**WARNING! Risk of Asphyxiation!** Handle fixed glass assembly with care. Inspect the gasket to ensure it is undamaged and inspect the glass for cracks, chips or scratches.

- **DO NOT** strike, slam or scratch glass.
  - **DO NOT** operate fireplace with glass removed, cracked, broken or scratched.
  - Replace as a complete assembly.
1. Remove front casting by grasping it at the top and lifting up. If the stove is already installed in a top vented configuration, the top casting will need to be lifted slightly to accommodate removal of the front casting. See Figure 10.1. Set front casting aside on prepared work surface.
  2. Release both glass latches at the lower corners of the appliance. Remove glass from appliance. See Figure 10.2.

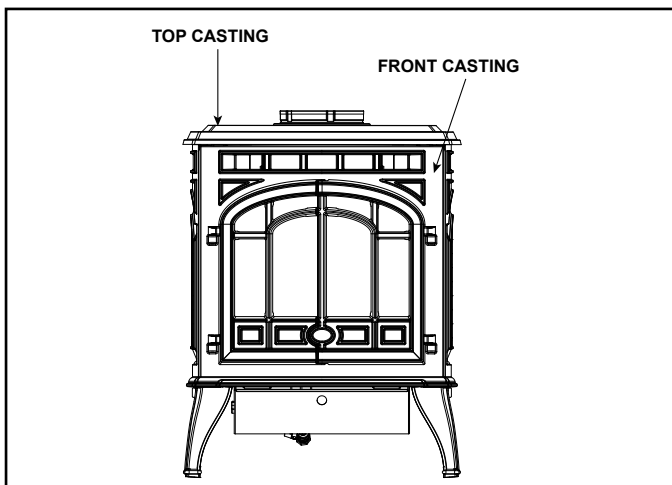


Figure 10.1 Remove Casting

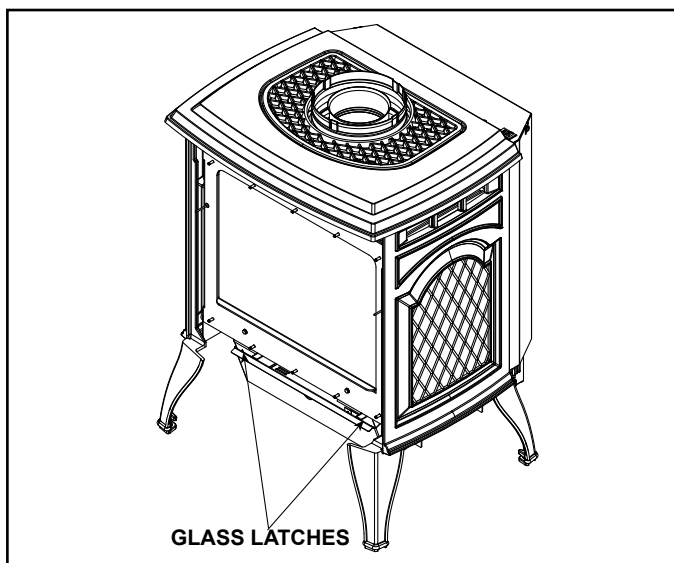


Figure 10.2 Remove Glass Frame

## B. Remove the Shipping Materials

Remove shipping materials from inside or underneath the firebox.

## C. Clean the Appliance

Clean/vacuum any sawdust that may have accumulated inside the firebox or underneath in the control cavity.

## D. Install the Log Assembly

## LOG PLACEMENT INSTRUCTIONS

### Log Set Assembly: LOGS-TS-IP1

Models: TIARAI-BK-IP1, TIARAI-BR-IP1, TIARAI-CES-IP1, SAPH-MBK-IP1, SAPH-D-MBK-IP1, SAPH-D-PMH-IP1, SAPH-D-CSB-IP1, TIARAI-BK-IPIL, TIARAI-BR-IPIL, TIARAI-CES-IPIL, SAPH-MBK-IPIL, SAPH-D-MBK-IPIL, SAPH-D-PMH-IPIL, SAPH-D-CSB-IPIL

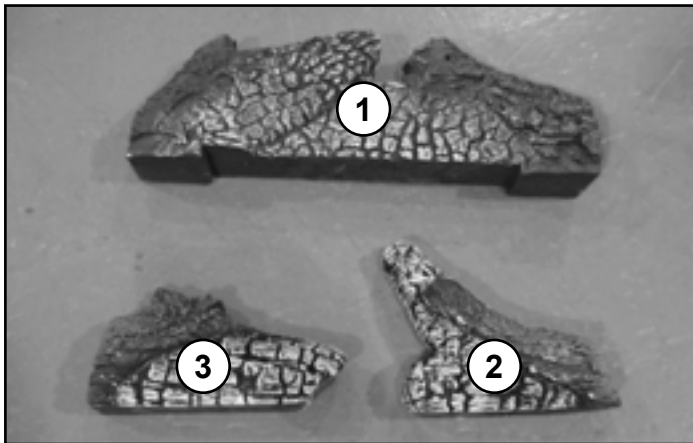


Figure 1.

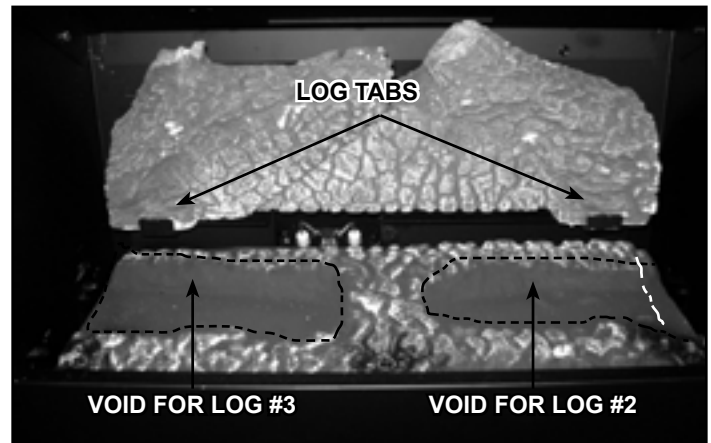


Figure 2. Placement of Log #1

**CAUTION:** Logs are fragile, handle with care. Log #1 (2342-701): Position rear log on log shelf above pilot assembly. Center log and pull base forward until it contacts the log tabs on the burner. See Figure 2.

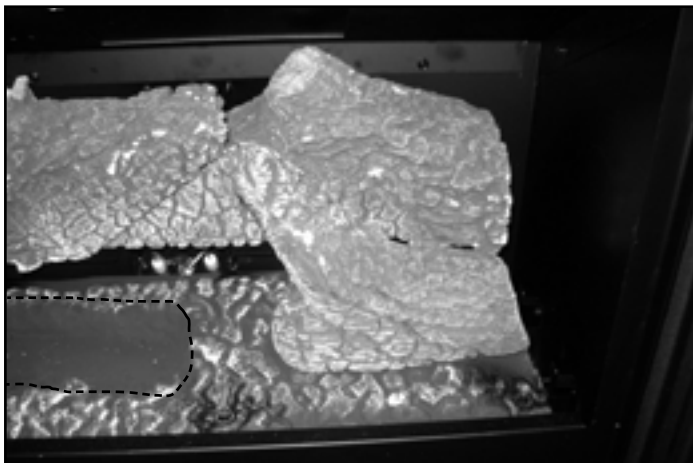


Figure 3. Placement of Log #2

**Log #2 (2342-702):** Place Log #2 into void on right side of burner. Slide log to the left until it contacts the burner topography. See Figure 3.

**Log #3 (2342-703):** Place Log #3 into void on left side of burner and slide log to the right until it contacts the burner topography. See Figure 4.

**Mineral Wool (050-721):** Place dime-sized pieces of mineral wool loosely over the burner ports. Only place mineral wool on the ports that are located in front of the two front logs as shown in Figure 5.

**NOTICE:** DO NOT place mineral wool over the burner ports in the center of the burner. If center ports are covered, sooting may occur. Adjust placement of mineral wool after fireplace has been turned off and is cool.

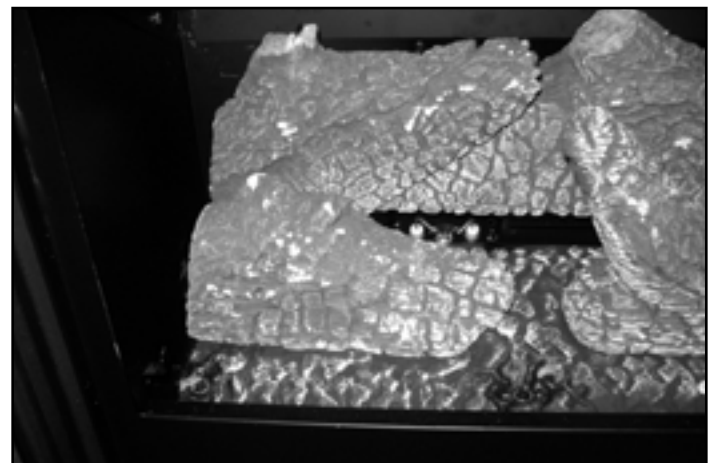


Figure 4. Placement of Log #3



Figure 5. Placement of Mineral Wool

2342-935

## E. Install Fixed Glass Assembly

**WARNING! Risk of Asphyxiation!** Handle fixed glass assembly with care. Inspect the gasket to ensure it is undamaged and inspect the glass for cracks, chips or scratches.

- **DO NOT** strike, slam or scratch glass.
- **DO NOT** operate fireplace with glass removed, cracked, broken or scratched.
- Replace as a complete assembly.

Reinstall the glass frame by engaging the latches at the bottom corners of the firebox with the glass frame tabs. See Figure 10.1 and 10.2 for reference. Reinstall front casting.

# 11 Reference Materials

## A. Vent Components Diagrams

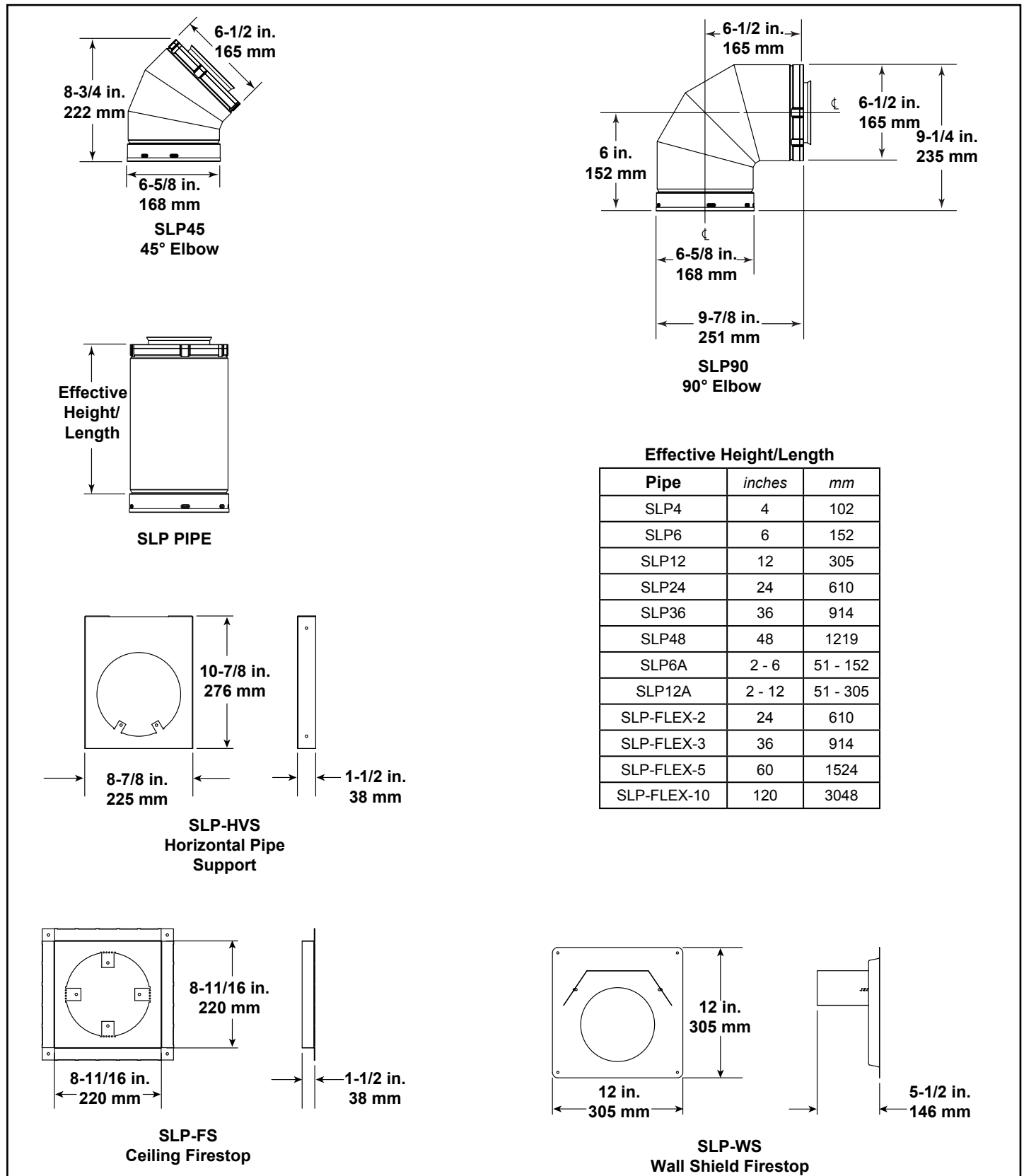
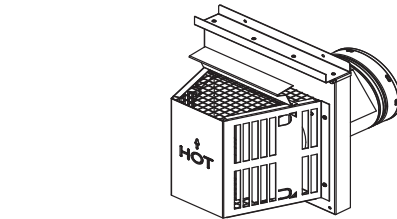
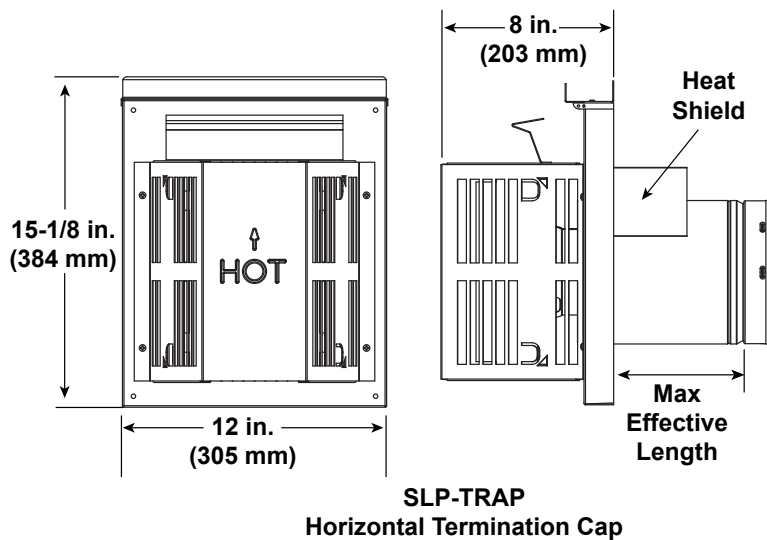


Figure 11.1 SLP Series Vent Components

## A. Vent Components Diagrams (continued)

**Note:** Heat shields **MUST** overlap by a minimum of 1-1/2 in. (38 mm). The heat shield is designed to be used on a wall 4 in. to 7-1/4 in. (102 mm to 184 mm) thick. If wall thickness is less than 4 in. (102 mm) the existing heat shields must be field trimmed. If wall thickness is greater than 7-1/4 in. (184 mm) a DVP-HSM-B will be required.



Term Cap	Minimum Effective Length	Maximum Effective Length
Trap1	3-1/8 in.	4-3/4 in.
	79 mm	121 mm
Trap2	5-1/4 in.	9-1/4 in.
	133 mm	235 mm

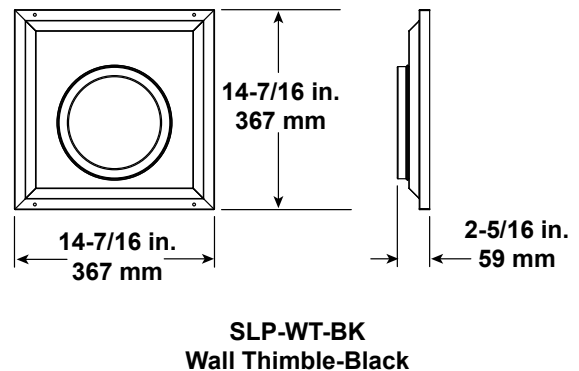
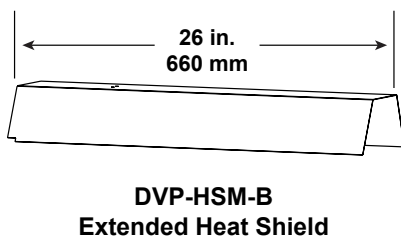
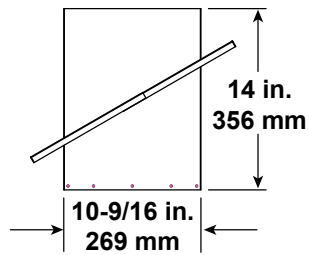
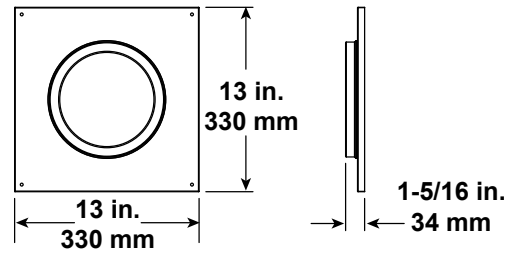


Figure 11.2 SLP Series Vent Components

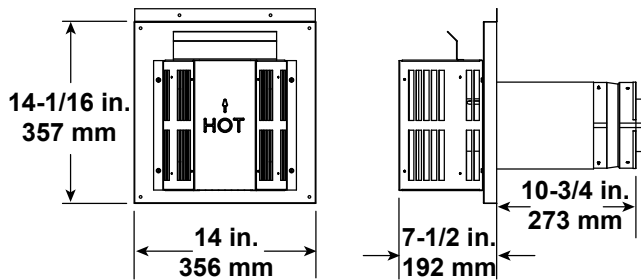
## A. Vent Components Diagrams (*continued*)



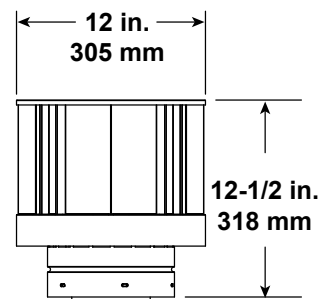
**SLP-CCS-BK**  
Cathedral Ceiling  
Support Box-Black



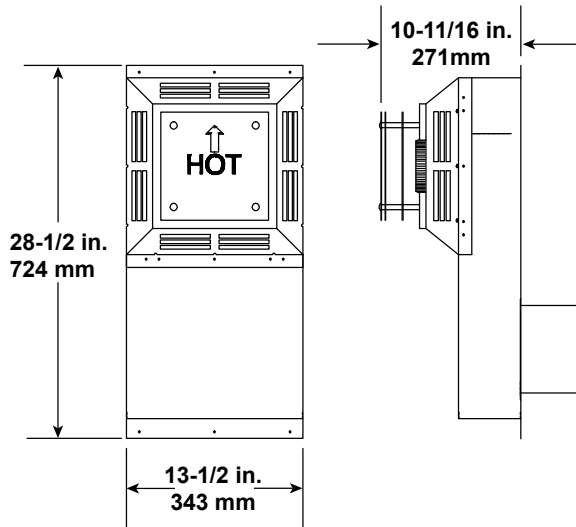
**SLP-DCF-BK**  
Ceiling Firestop  
Black



**SLP-FLEX-TRAP**  
Horizontal  
Termination Kit



**SLP-TVHW**  
Vertical  
Termination Cap



**SLK-SNKD**  
Snorkel  
Termination Cap

Figure 11.3 SLP Series Vent Components

→ A. Vent Components Diagrams (*continued*)

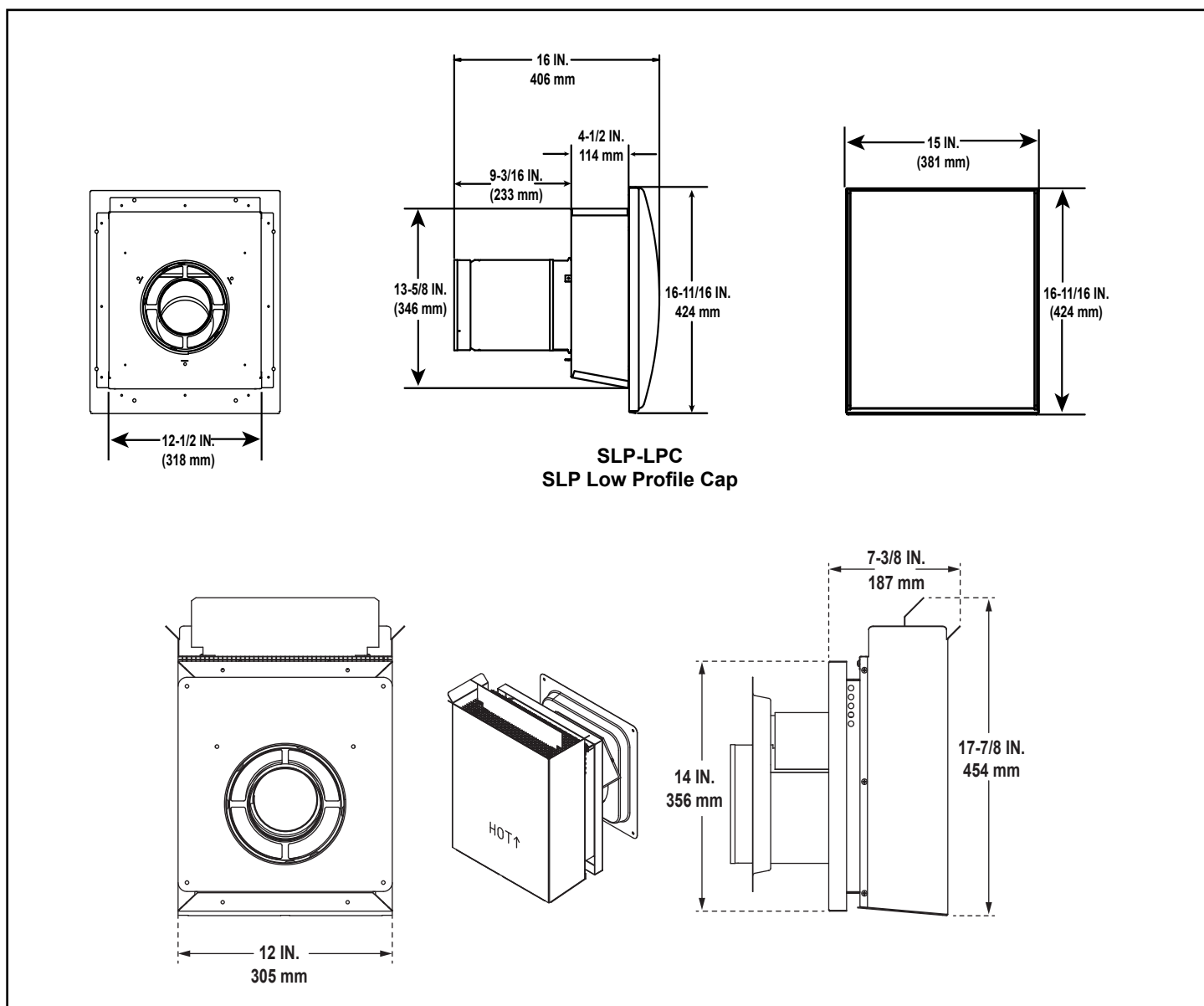
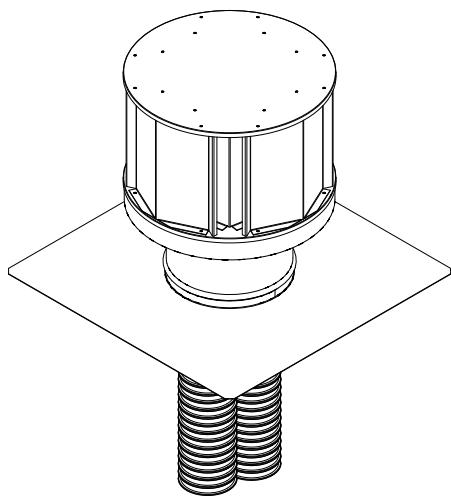


Figure 11.4 SLP Series Vent Components



## A. Vent Components Diagrams (*continued*)

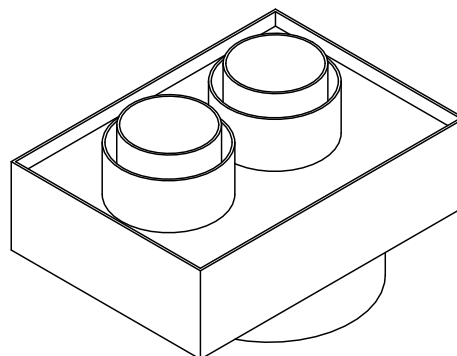
### COAXIAL to COLINEAR VENTING



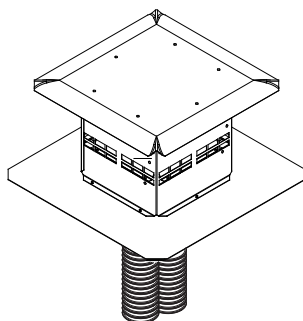
**LINK-DV30B**  
Flex Liner Kit



**768-380A**  
Stainless Steel Flex Pipe



**DV-46DVA-GCL**  
Coaxial/Colinear Appliance Connector



**LINKSQC-DV30 (COPPER)**  
**LINKSQB-DV30 (BLACK)**

**Figure 11.5 SLP Series Vent Components**

## B. Accessories

Install approved accessories per instructions included with accessories. Contact your dealer for a list of approved accessories.

***WARNING! Risk of Fire and Electric Shock! Use ONLY Hearth & Home Technologies-approved optional accessories with this appliance. Using non-listed accessories could result in a safety hazard and will void the warranty.***

### Remote Controls, Wall Controls and Wall

#### Switches

Follow the instructions supplied with the control installed to operate your fireplace:

For safety:

- Install a switch lock or a wall/remote control with child protection lockout feature.
- Keep remote controls out of reach of children.

See your dealer if you have questions.

#### Fan

Follow the instructions supplied with the fan kit to operate your fan. See your dealer if you have questions.

#### Refractory

Follow the instructions supplied with the refractory. See your dealer if you have questions.

**Quadra-Fire, a brand of Hearth & Home Technologies**  
352 Mountain House Road, Halifax, PA 17032  
[www.quadrafire.com](http://www.quadrafire.com)

Please contact your Quadra-Fire dealer with any questions or concerns.  
For the location of your nearest Quadra-Fire dealer,  
please visit [www.quadrafire.com](http://www.quadrafire.com).

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